

RECORDS AND DESCRIPTIONS OF SOUTH ASIATIC MICROLEPIDOPTERA

by

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Abstract

In this paper two genera and 22 species of Microlepidoptera from South Asia, belonging to the families Tortricidae, Xyloryctidae, Oecophoridae and Ethmiidae are described as new, viz. *Cimeliomorpha* g.n. (type: *Copromorpha cymbalora* Meyr.), *Thymiatris seriosa*, *scolia* and *microloga*, *Coenorycta plutotera*, *anholobrysa* and *acrostega*, *Odites sphaerophyes*, *Casmara regalis*, *phobographa*, *uniata*, *rufipes*, *rhodotrachys*, *kalsboveni*, *Tonica syngnoma*, *pharmacis*, *centroluta*, *peripsacas*, *melanoglypha*, *Ethmia submersa*, *Agrioceros subnota*, *Chrysethmia* g.n. *hypomelas* (type) and *neogena*. One new name (*Cryptophasa antalba*, Xyloryctidae) is proposed and three noteworthy species are recorded (Xyloryctidae, Glyphipterygidae and Oecophoridae); finally a lectotype is selected for *Tonica effractella* (Snellen, 1879), while the genus *Tonica* Walker, 1864, is treated more extensively.

Wing neurations and heads of the new genera and genitalia of the new species, where available, of the two sexes, are figured.

When studying several collections of South Asiatic Tortricoid Microlepidoptera I encountered striking, apparently new, species from other families. Some were so fascinating that I described them on the way. Besides, several descriptions of Xyloryctidae have been made, preliminary to an intended revision of this family; as other duties will delay that revision, I prefer to publish now the descriptions already made.

The material treated in this paper originates from the British Museum (Natural History), London (BM), and from the Leiden Museum (LM). Of especial interest is the excellent material, collected by my friend, the late J. P. A. KALIS, in 1937, in the hardly ever searched regions of Western Central Celebes, and in 1938, in southwest Celebes; it was preserved in the Rothschild Collection, Tring, and is now transferred to London.

I am indebted to the Trustees of the British Museum (Natural History) for the permission to work their material, to retain a few duplicates for the Leiden collection, and to publish the results in the present series. Furthermore I am very grateful to the following gentlemen for their kind assistance in many ways during my studies at the British Museum and at Tring: Messers. W. H. T. TAMS, J. D. BRADLEY, P. E. S. WHALLEY, M. SCHAFFER, W. TREMEWAN and D. CARTER. Where not otherwise indicated, the material is in the Leiden Museum.

Some of the figures, made by Mr. A. C. M. VAN DIJK, have been financed from a grant for which I am indebted to the Netherlands Organisation for Tropical Research (WOTRO). Other drawings have been made by Mr. W. BERGMANS, of this Museum, and by the author.

Two genera and 22 species are described as new and three species are recorded below. A lectotype for *Tonica effractella* (Snell.) is selected.

TORTRICIDAE, LASPEYRESIINAE

Cimeliomorpha gen. nov.

Fig. 1

Head with loosely appressed scales, roughish on vertex. Ocellus posterior. Proboscis absent. Antenna in male minutely ciliate. Palpus moderate, ascending, appressed to face, median segment thickened throughout with scales roughish along lower edge, apex narrowed, terminal segment moderate ($1/3$), obtuse. Thorax smooth. Posterior tibia normal.

Fore wing oblong-truncate, apex and termen rounded. Vein 2 from $2/5$, 3 from angle, 3—8 distant, 7 to termen, 8 from angle, 9 close to 8, 10 slightly closer to 9, 11 from just before middle. Upper parting vein from halfway between 10 and 9 to above base of 7, lower parting vein from towards base to below base of 5.

Hind wing with a cubital pecten, broadly semioval. Vein 2 from $1/3$, 3 and 4 connate from angle, 5 distant and only slightly curved throughout, 6 and 7 separate, little approximated towards base.

Male genitalia. Tegumen rounded, pedunculi with triangular frontal lobes. Uncus absent. Tuba analis sometimes with a bifid top, halves robust and rounded. Socius, a broad and flat lobe, appressed and pending. Valva with a deep excision, sacculus narrowly oblong-oval and simple, cucullus long, narrow, curved, with an apical spine. Aedeagus diversely shaped, subcylindrical.

Female genitalia. 7th sternite simple, slightly sclerotized. Ostium not modified, concealed behind it. Colliculum, a small dark ring, open ventrally, origin of ductus bursae granulate. Signum, a small slightly concave granulate sclerite.

Type-species, *Copromorpha cymbalora* Meyr. (Assam).

A genus of several brilliantly marked species which need a revision. So far regarded as two species, "*Laspeyresia*" *novarana* Feld. & Rog. and "*L.*" *cymbalora* Meyr.

A photograph of the male genitalia of the type-species was published by CLARKE, 1958, Meyrick's Types, vol. 3, t. 216 fig. 1a.

XYLORYCTIDAE

Thymiatrix seriosa spec. nov.

Fig. 2

♂ 60—65 mm. Head ochreous-tawny. Palpus ochreous-tawny, slightly mixed with brown externally; median segment long, obliquely ascending, by far exceeding vertex, moderately broad, hardly dilated, along apical fourth slightly curved upwards; with appressed scales, roughish only towards apex below; terminal segment rather slender, straight, $1/2$, pointed. Thorax (greasy) dark purple, collar, tegulae except inner edge and a median suffused spot, whitish (more so in paratype). Abdomen and legs dark glossy brown, spines on tergites little showing, brownish-orange.

Fore wing oblong, narrow, moderately dilated, costa curved at base, faintly

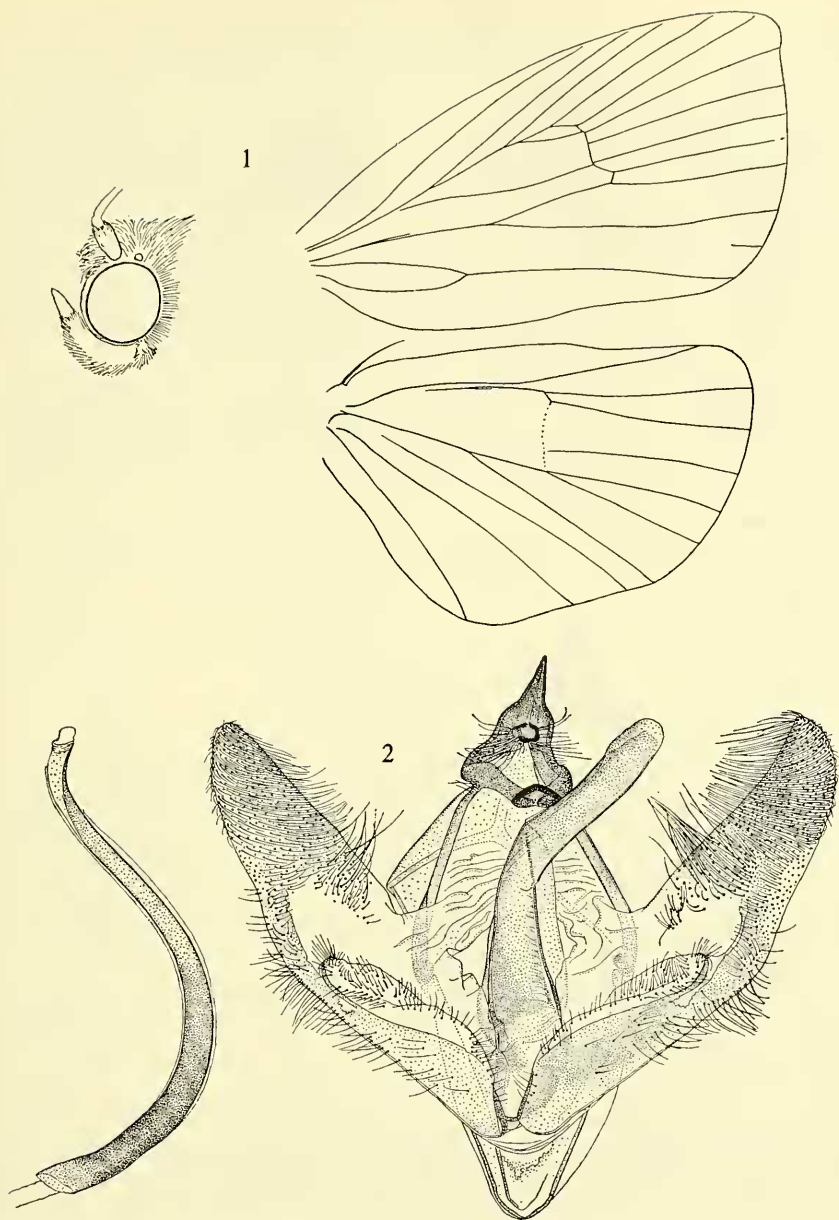


Fig. 1. *Cimeliomorpha cymbalora* (Meyrick), comb. nov., ♂, head and wing neuration.

Fig. 2. *Thymiatris seriosa* spec. nov., ♂, holotype, genitalia; left, aedeagus

concave in middle, almost straight, apex rounded, termen rounded, little oblique. Dark brownish-purple, with a silky gloss, moderately mixed with whitish except along costa; this mixing more distinct below the line formed by the upper edge of cell and veins 7 + 8; edges of cell, a broad vertical bar along closing vein, and

narrow, less distinct streaks along veins beyond cell scarcely mixed with white; posterior third of costal edge indistinctly suffused with pale ochreous with three distant and very faint pale ochreous spots posteriorly, termen with a series of roundish deep orange-brown spots, confluent, so as to form a complete band, strongly constricted at interspaces between ends of veins and gradually narrowed downwards, from apex to above vein 3. Cilia light brown with a pure white basal and a dark purple subbasal line, both interrupted by small dentations emitted by terminal brown-orange fascia.

Hind wing glossy light greyish, towards edge suffused with dark fuscous, veins narrowly brownish. Cilia whitish, with light purplish broad spots opposite ends of veins, with a subbasal light purplish line becoming blackish-purple across every one of the above mentioned spots.

Male genitalia. Tegumen rather high. Gnathos constricted above middle. Vinculum long. Valva long and narrower than in other species, cucullus narrowed, sacculus $1\frac{1}{2}$, upper edge forming a weak elongate body with a rounded top. Anellus, an extremely long tube, almost as long as valva. Aedeagus longer than anellus, slender and sinuate.

A s s a m, "Khasis, May, 1896, Nat. Coll." (Rothschild Bequest, BM), 1 ♂, holotype, gen. no. 4765; 1 ♂, paratype. A very distinct species.

Thymiatris scolia spec. nov.

Fig. 3

♂ 34 mm. Head rather dull light ochreous touched with tawny. Antenna brownish-fuscous, ciliations under 1. Palpus light brownish-ochreous, median segment except towards apex and terminal segment along upper edge suffused with brown; median segment, about $1\frac{1}{2} \times$ as long as terminal, more spindle-shaped than in *microloga*. Thorax glossy ochreous-white, tegula towards tip mixed with fuscous. Abdomen pale ochreous-fuscous, spines forming a broad band across third tergite, golden.

Fore wing elongate-truncate, narrow, apex subrectangular, termen rounded; veins 7 and 8 stalked, 7 to apex. White, dusted with dark fuscous. A strongly suffused dark fuscous streak along costa, limited below by cell and the course of vein 9; this suffusion forming transverse short bands across cell: at $\frac{1}{3}$, $\frac{2}{3}$ and along closing vein; a broader, strongly outwards-oblique suffused band from lower edge of costal streak before its end, towards tornus, reaching halfway across wing, more distinct on veins; apex and termen with an ochreous-fuscous band, edged anteriorly by dark fuscous suffusion, broad in apex, rather abruptly narrowing downwards, reaching to tornus. Cilia (imperfect) whitish mixed with tawny and brown.

Hind wing unicolorous light fuscous-ochreous with a silky gloss. Cilia (imperfect) concolorous, with a suffused subbasal darker line dilated into faint dark spots opposite ends of veins.

Male genitalia. Closely resembling those in *T. microloga*, but differing as follows. Gnathos broader, not constricted. Valva slightly longer, much broader, top

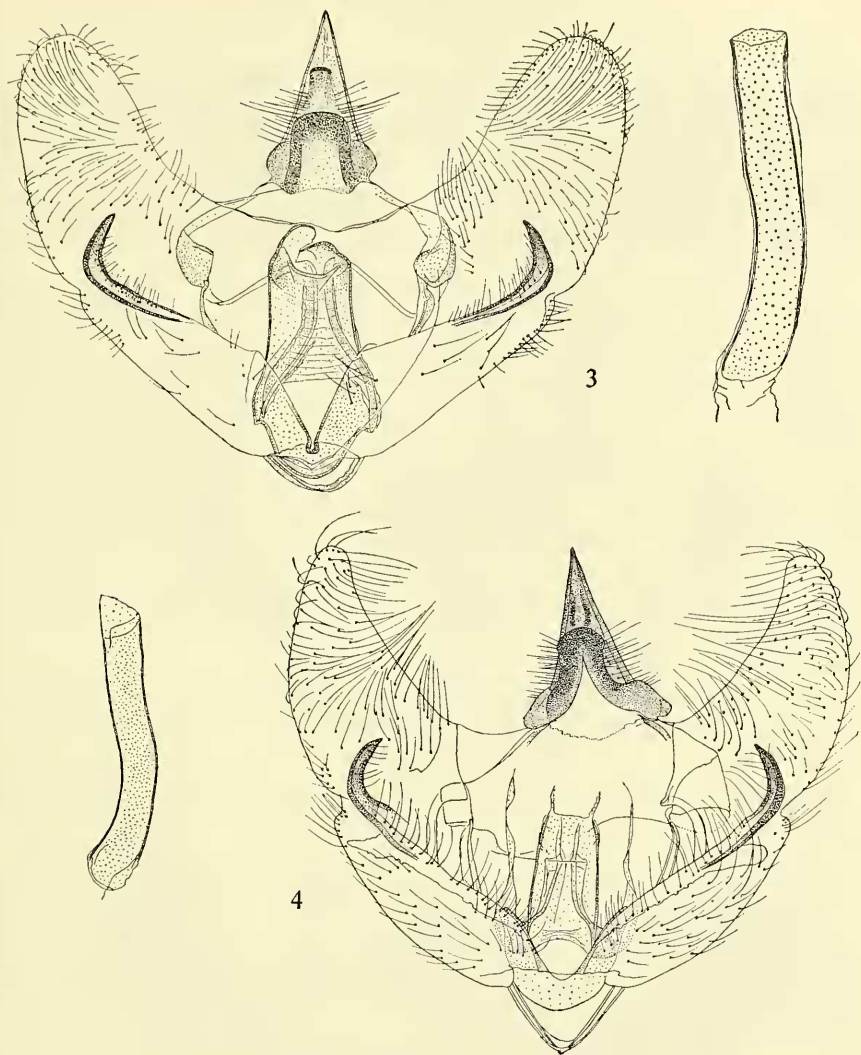


Fig. 3—4. Male genitalia of *Thymiatris* Meyr. 3, *T. scolia* spec. nov., holotype; 4, *T. microloga* spec. nov., holotype

broadly rounded. Hook of sacculus longer and more bent. Anellus much broader. Aedeagus more robust and longer.

West Java, Soekaboemi, 1800 m, 10.XII.1935 (M. A. VAN GROENENDAAL), 1 ♂, holotype, gen. no. 4669. Superficially extremely similar to *Thymiatris microloga* spec. nov., but immediately recognisable by different neurulation and shorter palpi.

Thymiatrix microloga spec. nov.

Fig. 4

♂ 37—41 mm (holotype 38 mm). Head dull pale ochreous, collar shining pale ochreous. Antenna light ochreous, ciliations about $1\frac{1}{3}$. Palpus pale ochreous, median segment along basal half of upper side with a brown streak, by far exceeding base of antenna, $2\frac{1}{2} \times$ as long as terminal segment. Thorax snow-white, dusted irregularly with dark fuscous-grey. Abdomen pale golden-ochreous, glossy, dorsal bands of spines golden-orange. Legs pale ochreous mixed with brown hairs, spurs brownish.

Fore wing narrow, elongate-truncate, costa slightly curved at extremities, gently concave in middle, almost straight, apex rounded, termen gently rounded, almost vertical. Pure white, dusted coarsely throughout with dark fuscous-grey; a continuous streak of the same colour along costa, narrowed in middle, confluent with a similar but narrower irregular streak along upper edge of cell; veins above and beyond cell, as far as vein 2, narrowly streaked with the same colour, as also is the discoidal vein; sometimes an inwardly-oblique series of short darker streaks along veins, this series running from costa before apex to dorsum well before tornus. A series of rather large pale ochreous spots on ends of veins 3—9, becoming smaller on both ends of the series, surrounded by brownish-ferruginous scales. Cilia pale ochreous with a paler base and a dark brown submedian band, posterior half of cilia rather mixed with brown, cilia in tornus white dusted with dark fuscous-grey.

Hind wing glossy ochreous-grey, along upper part of termen and in apex narrowly pale ochreous strewn with dark brown. Cilia light ochreous-fuscous, with a distinct dark fuscous subbasal narrow band.

Male genitalia. Similar to those of *T. melitacma* Meyr., but differing thus. Valva shorter, with cucullus much more narrowed and pointed, also more curved. Aedeagus half as long as in *melitacma*. Aedeagus shorter.

East Java, Tengger Mountains, Nongkodjadar, 1300 m, 19.XI.1938 (A. M. R. WEGNER), 1 ♂, holotype, gen. no. 4628; 2 ♂, paratypes.

Closely allied to the type-species, *T. melitacma* Meyr., from India, but with the veins 4 and 5 of the fore wing separate and the genitalia different. Nearest to a new *Thymiatrix* species from the Philippines, but with the forewing more suffused and with the valva differently shaped.

Cryptophasa antalba nom. nov.

Cryptophasa proleuca Diakonoff, 1948, *Treubia* 19 : 191, t. 6 fig. 8; nec Meyrick, 1890, *Trans. Roy. Soc. S. Austral.* 13 : 31 (*Cryptophaga*).

As the generic name *Cryptophaga* Meyrick, 1890, is an emendation of *Cryptophasa* Lewin, 1805, I am now satisfied that the above name proposed by myself is invalid, being a junior primary homonym; therefore I am proposing the above new name for this species.

Coenorycta plutotera spec. nov.

Fig. 6

♂ 54 mm. Head pale golden-ochreous. Antenna dark brown, pectinations $2\frac{1}{2}$, light brown, finely ciliate, scape short, chestnut-brown. Palpus ascending, appressed to face, median segment straight, abruptly curved at upper third, densely scaled, scales smoothly appressed, lower edge flattened, terminal segment $\frac{1}{2}$, slightly flattened laterally, obtusely pointed; light brown, laterally suffused with dark brown. Thorax pale ochreous-golden, a complete transverse band beyond collar,

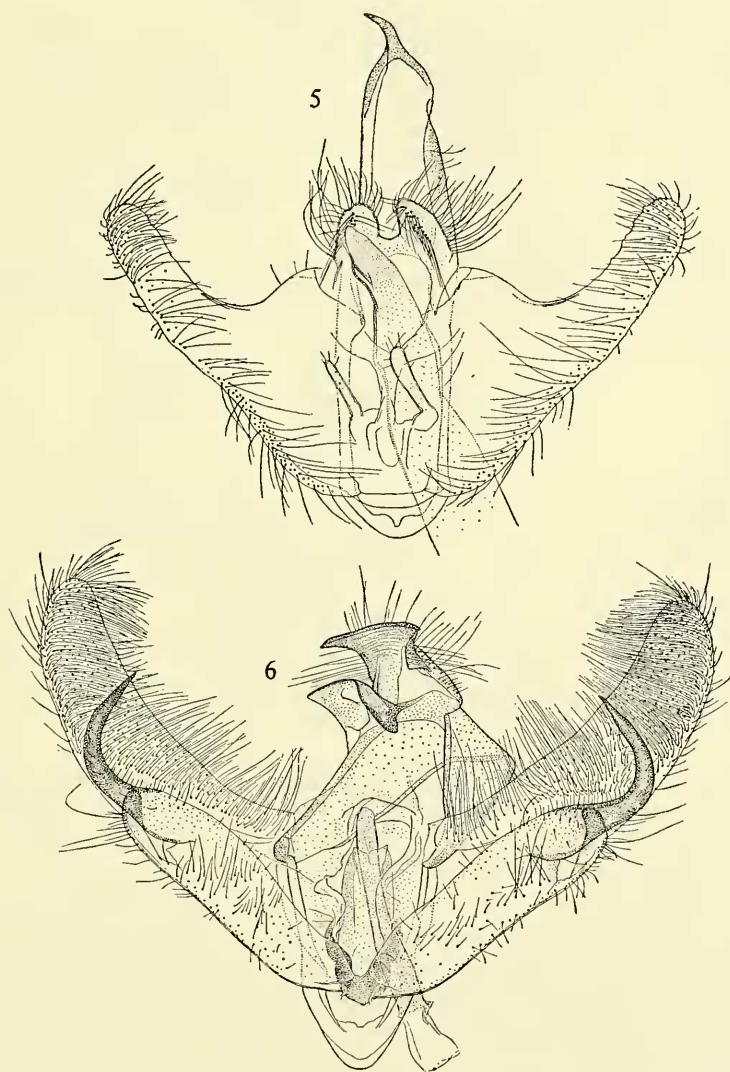


Fig. 5—6. Male genitalia of Xyloryctidae. 5, *Odites sphaerophyes* spec. nov., holotype; 6, *Coenorycta plutotera* spec. nov., holotype

light orange-golden with a metallic gloss. Abdomen pale golden, anal tuft somewhat dull, tawny-ochreous. Pectus, anterior and median legs, and posterior tarsus dark brown, posterior tibia lighter brownish, with dense but not loosely projecting hair-scales above and beneath.

Fore wing oblong, rather narrow, costa straight, hardly concave in middle, curved towards apex, moderately rounded, termen almost straight, hardly rounded. Pale ochreous-golden, costal third suffused with dark brown and with some faint bluish reflections, lower edge of suffusion becoming lighter brown. Cilia pale ochreous-golden, around apex touched with tawny and with a dark brown subbasal band there.

Hind wing and cilia pale ochreous-golden with a silky gloss, somewhat less distinct than in the fore wing; hairs over anal area long and dense, concolorous.

Male genitalia. Tegumen rather short, pedunculi triangular. Uncus porrected, flattened, top sclerotized, truncate, side angles acutely produced. Gnathos porrect, subquadrate. Valva gradually narrowed, slightly curved, rather slender, top rounded. Sacculus $1/2$, apical hook very large, strongly bent. Aedeagus slender.

New Guinea, Rook Island, VII.1913 (A. S. MEEK), 2 ♂, holotype gen. no. 4856 (BM). Nearest to *C. psammochta* Meyr., but more robust, with stouter body and slightly shorter and broader wings, longer pectinated dark brown antennae and stouter palpi. There is no trace of a discal spot on the end of cell in the fore wing, as in *psammochta*.

Coenorycta anholochrysa spec. nov.

Fig. 7

♂ 38 mm. Head whitish with a pale orange tinge. Antenna dark brown, fasciculate-ciliated, ciliations 1, white. Palpus long, little curved, appressed to face, rather slender; median segment with closely appressed scales, dark fuscous-grey, far exceeding base of antenna; terminal segment about $1/3$, pale ochreous, pointed. Thorax white with a pale orange tinge, a pale golden median spot, shoulder pale golden. Pectus suffused with rather dark brown. Abdomen glossy, golden, slightly mixed with a few dark scales, sides of abdomen with a suffused brownish streak. Legs blackish, posterior tibia with loose, projecting long hairs above and beneath.

Fore wing oblong, rather narrow, costa straight, curved before apex, apex rounded, termen rounded, moderately oblique. Glossy bright golden, costa brownish-black as far as lower edge of cell, this colour becoming suffused and lighter brown downwards, black dusting forming distinct streaks along upper edge of cell and veins 7 + 8, 9 and 10. Cilia light golden, a blackish subbasal band around apex.

Hind wing and cilia glossy bright golden-yellow, brighter than fore wing.

Male genitalia. Similar to those in *C. plutotera*, differing thus: gnathos slightly prominent in middle of frontal edge, sides distinctly folded and inbent. Valva more narrowed and pointed. Sacculus under $1/2$, top not rounded, apical hook less strongly bent.

West Celebes, Paloe, Mt. Tompoe, 2700 ft, I.1937 (J. P. A. KALIS), ♂, holotype, gen. no. 4857. Superficially very similar to the foregoing, Papuan

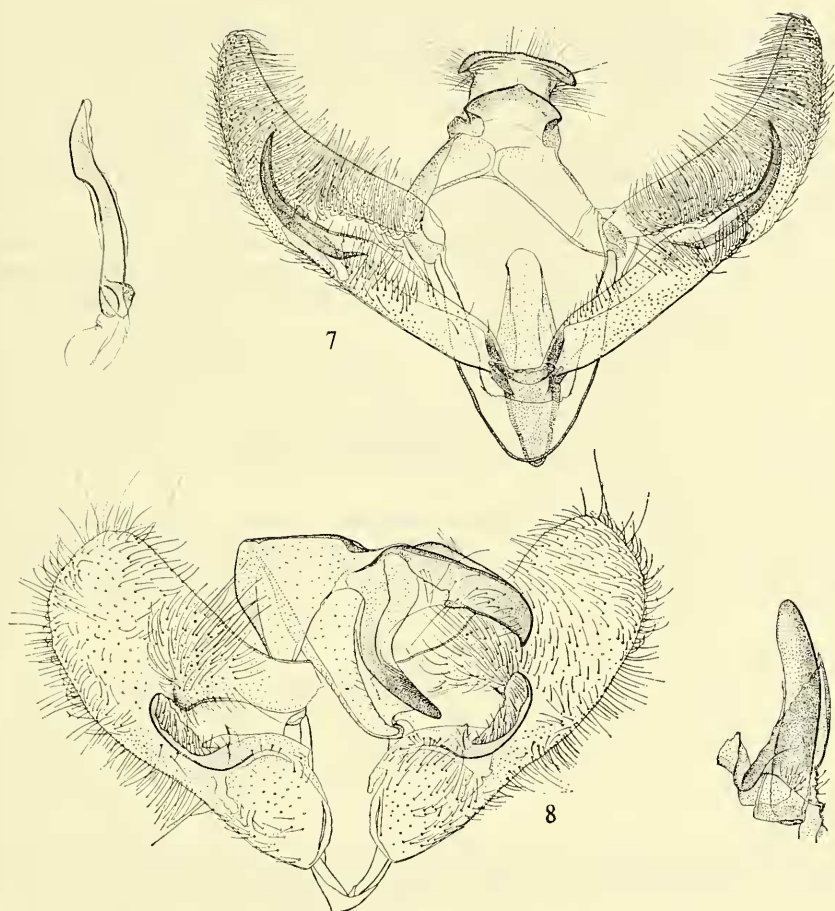


Fig. 7—8. Male genitalia of *Coenorycta* Meyr. 7, *C. anholochrysa* spec. nov., holotype; 8, *C. acrostega* spec. nov., holotype

species, but smaller, more slender, with fasciculate-ciliate antennae, hind legs entirely dark above (not only dark tarsi, as in *plutotera*), etc.

Coenorycta acrostega spec. nov.

Fig. 8

♂ 30—31 mm. Head purplish-white, glossy, sides of face suffused dark purple. Antenna purplish-white, scape light purplish, pectinations dark purple. Palpus recurved, ascending, long, median segment reaching base of antenna, terminal segment over $1/2$, pointed; sordid purplish-white. Thorax dark purple, collar and tegulae purplish-white. Abdomen orange, becoming pale towards base, suffused with brown towards apex, suffused dark fuscous bands to segments. Legs ochreous-orange.

Fore wing oblong-truncate, rather narrow, little dilated, costa hardly curved at base, straight, rather curved along posterior fifth, apex rounded-prominent, termen strongly concave, oblique. Whitish, finely irrorated with vinaceous-purple, tips of scales edged narrowly with that colour; more than costal half dull vinaceous-fuscous or purplish, edge of this colour straight to before lower angle of cell, thence gradually curved downward, to tornus, concave; this edge suffused with dark purple; apex slightly dusted with purplish-white. Cilia brownish-purple, base white, with a subbasal deep purple line.

Hind wing bright ochreous, paler and dull along costa, paler and with a golden gloss on dorsum; extreme edge of wing in apex and along termen variably dusted with deep purple. Cilia golden-ochreous, in apex and along termen variably suffused and dusted with deep purple.

Male genitalia. Uncus large and strong, triangular, top flattened laterally, beak-like. Gnathos moderate, triangularly pointed, arms sinuate, top porrect. Valva elongate-oval, little curved, top broadly rounded; sacculus $1/3$, upper edge forming a sinuate hollow ridge with rounded top, reaching to middle of valva. Aedeagus rather short and straight.

West Celebes, Paloe, Sidaonta, 4500 ft., VI.1937, 1 ♂, holotype (31 mm), gen. no. 4720; Paloe, Koelawi, 3100 ft., III.1937, 2 ♂, paratypes; Lindoe, Paloe, 3700 ft., IV.1937, 1 ♂, paratype (J. P. A. KALIS) (Rothschild Bequest, BM).

A distinct, characteristically coloured species.

Odites sphaerophyes spec. nov.

Fig. 5

♂ 18 mm. Head, scape of antenna and thorax pale ochreous-creamy. Antenna brownish, ciliations 3, white. (Palpi missing). Abdomen pale ochreous.

Fore wing oval, costa curved, apex and termen strongly rounded, the former indefinite. Creamy-yellowish, pale, veins a trifle darker ochreous, dorsum slightly suffused with deeper yellowish and ochreous. Second discal stigma strongly suffused, ochreous-tawny; a faint tawny suffusion on $1/3$ of dorsum, another, smaller, on dorsum before end of fold. Cilia very pale yellowish.

Hind wing pale, whitish-yellowish with a silky gloss, cilia concolorous.

Male genitalia. Tegumen narrow. Uncus moderate, hooked. Gnathos shaped as two hairy strong lobes. Valva with a broad base, costa very short, cucullus rather short, straight, not narrowed, top rounded. Anellus lobes clavate, rather slender, about 4 or 5 times as long as broad. Vinculum rounded.

West Celebes, Paloe, Mt. Rangkoenaoe, 900 feet, XI.1936 (J. P. A. KALIS), 1 ♂, holotype, gen. no. 6129; 2 ♂, paratypes, gen. no. 5571, 5749 (Rothschild Bequest, BM). Closely allied to *O. paracyrta* Meyr. from Ceylon, but the genitalia are distinct: cucullus straight, gnathos lobes longer and anellus lobes much shorter in the present species.

***Ptochoryctis chalazopa* Meyrick, 1920**

Ptochoryctis chalazopa Meyrick, 1920, Exot. Microlep. 2 : 321 (♂ ♀, Java). — B. S. Rao & Hoh Choo Chuang, 1965, Pests of Hevea : 50, T. Fig. 1, i1, i2 (shelter, larva, adult figured).

Food-plant, *Hevea*.

East Borneo, Samarinda, Muara Kaman, 50 m, XI.1950 (A. M. R. WEGNER), 1 ♂, gen. no. 4657. The single specimen is in good condition, with markings jet-black and more distinct than in the typical series from Java, in the British Museum (LM).

The original specimens, collected by W. ROEPKE, were "making curious webs ... on bark of *Hevea*."

GLYPHIPTERYGIDAE

***Imma mormopa* Meyrick, 1910**

Fig. 33

Imma mormopa Meyrick, 1910, Trans. Ent. Soc. Lond.: 467 (Moluccas : Banda, Amboina, ♂ ♀). — Clarke, 1955, Meyrick's Types 1 : 211. — Diakonoff, 1949, Bijdr. Dierk. 28 : 138 (*Simaethis nubicincta* syn.).

Simaethis nubicincta Meyrick, 1938, Iris 52 : 52, 86 (Java, ♀). — Clarke, 1955, Meyrick's Types 1 : 219.

This somewhat surprising synonymy became apparent to me when studying the Glyphipterygidae in the British Museum in 1946. Later I had the opportunity to compare the lectotype of *mormopa* (selected but not yet published, by Dr. J. F. GATES CLARKE) and the holotype of *nubicincta*. They are one and the same, very distinct, species.

Male genitalia. Uncus pointed, sickle-shaped. Socius short, free, subporrected. Valva strongly concave, sacculus thickened, moderately haired, unarmed; cucullus curved outwards, narrow, strong. Lobi anales broad, flat, tops rounded and dilated. Aedeagus moderate, sinuate (gen. no. 4791).

Further material studied. Moluccan Islands, Banda, VIII.1892 (W. DOHERTY), 1 ♂. West Java, Mt. Gedeh, 2500 feet, 1934 (J. P. A. KALIS), 1 ♂ (Rothschild Bequest, BM).

OECOPHORIDAE

***Casmara* Walker, 1863**

Casmara Walker, 1863, List Lep. Het. Brit. Mus. 28 : 518 (Type-species, *Casmara infaustella* Walker, North India) — Meyrick, 1922, Genera Ins. 180 : 60. — Fletcher, 1929, Mem. Agr. Ind., Ent. 11 : 40. — Gaede in Bryk, 1939, Lepid. Catal. 92 : 400. — Clarke, 1963, Meyrick's Types 4 : 134.

Male genitalia. Tegumen rather small, subconical, pedunculi being broad, and rounded longitudinally. Uncus little curved, slightly constricted in middle, densely haired and sclerotized. Gnathos strong, sclerotized and rigid, arms short, point

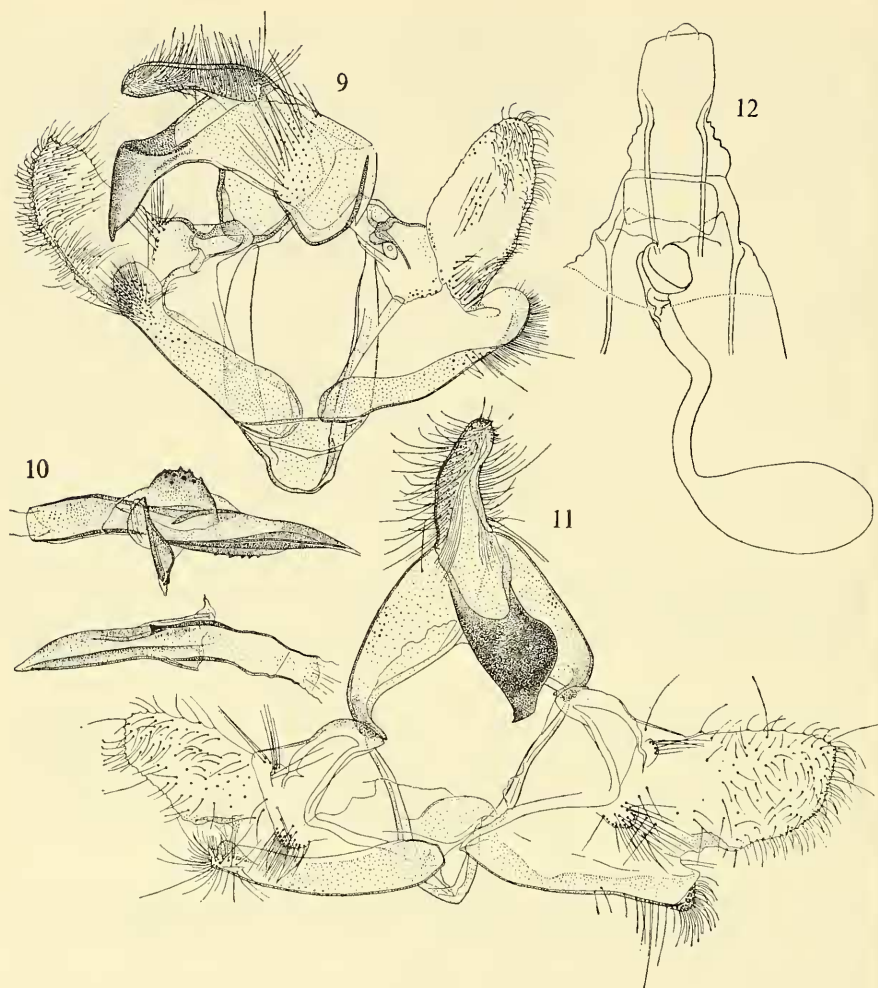


Fig. 9—12. Genitalia of Oecophoridae. 9, *Casmara regalis* spec. nov., ♂ holotype; 10, the same, aedeagus; 11, *C. uniata* spec. nov., ♂ holotype, left: aedeagus; 12, *C. kalshoveni* spec. nov., ♀, allotype, a sketch

more or less triangular, sometimes thickened and prominent in centre. Vinculum large, elongate. Valva short, broad at base, sacculus over 1, top forming a free lobe, dentate or simple, cucullus thinly haired, suboval. Aedeagus sclerotized, straight, acutely pointed, with longitudinal ridges, sometimes denticulate, and a lateral denticulate prominence.

Female genitalia. Eighth sternite moderately sclerotized, densely haired along upper edge. Ostium, a diversely shaped oblique cup, colliculum very short. Ductus and corpus bursae simple.

The genitalia show only slight specific differences, which are sufficient, though, for discrimination of species. Superficial differences usually are more striking.

The species are rather similar, very large insects with narrow, long wings and long legs, often thickened with brushes or whorls of dense scales. The scaling of the palpi and of the legs show differences which must be only specific, for the neururation and the genitalia are extremely similar in all the species.

Casmara regalis spec. nov.

Fig. 9—10

♂ 46—59 mm. Head and thorax creamy-white, strongly mixed with dark fuscous, except on forehead and face, thorax with a white apex. Antenna whitish dotted with dark fuscous, ciliations $1\frac{1}{2}$, blackish, scape creamy, fuscous on basal half, pecten creamy. Labial palpus long, median segment far exceeding base of antenna, rough beneath, but not tufted; terminal segment about $1\frac{1}{2}$, spindle-shaped, rather thick, pointed, roughly dilated below top; creamy, densely mixed with dark fuscous, fringe at apex below white, terminal segment white, black above, with a subapical black band. Abdomen bronze-purplish, posterior edges to segments bluish-black, tergites 4—6 with broad bronze-purplish bands of fine spines, anal tuft brightly ochreous. Legs, whitish or creamy mixed with dark fuscous, posterior tibia bluish-black spotted with white.

Fore wing narrow, oblong. Vein 11 from about $\frac{1}{3}$ of cell. White ground colour almost entirely obscured by dense light brown dusting, partly mixed with darker fuscous-brown and mixed over this again with white; black suffused streaks between veins and a curved longitudinal streak above dorsum; a large transverse-subrectangular brown spot on end of cell, suffusedly and narrowly edged with creamy; some irregular white spots and dots, tending to form horizontal rows posteriorly, not reaching apex and termen; independent from these a subterminal series of white strigulae parallel to wing margin; two pale ochreous spots on costa before apex. Cilia pale fuscous, glossy, with a white basal line and a black subbasal band, lower half of cilia with white bars, three bars more distinct and larger towards tornus.

Hind wing deep purple-black, apical sixth white, with a narrow black marginal line interrupted on veins, veins 6 and 7 narrowly black; tuft on vein 1a bluish-black. Cilia purple-black, around apex and along upper half of termen white.

Male genitalia. Gnathos pointed, upper surface concave, lower part in profile slightly convex. Sacculus gradually dilated and rounded basad, its apex with a semicircular simple lobe. Cucullus somewhat irregularly semioval, not distinctly impressed above middle. Aedeagus strong, dentate beyond middle above, median prominence moderately dentate.

Female unknown.

The genitalia show a remarkably close relationship with *C. kalshoveni* sp. n. described below, which superficially is entirely different.

Celebes. Southwest Celebes, Pangean near Maros, 2000 feet, III.1938, 1 ♂, holotype, gen. no. 4858; 4 ♂, paratypes, gen. no. BM 5546 (J. P. A. KALIS) (BM). — North Celebes, Minahassa, Tonsea Lama, 16.V. (VAN BRAECKEL), 1 ♂, paratype (LM). — Northwest Celebes, Goeroepahi, 13.I.1917 (W. KAUDERN), 1 ♂, paratype (LM).

Casmara phobographa spec. nov.

Fig. 23—24, 28

♂ 35 mm. Head pale ochreous, strewn with fuscous. Palpus whitish strongly mottled throughout with dark fuscous. Antenna pale ochreous, basal fifth banded with brown above; ciliations over 1. Thorax pale ochreous densely suffused with fuscous-brown, tegulae only strewn with that colour. Abdomen pale ochreous densely strewn with fuscous-purple, posterior halves of segments with a median band of brassy bristles, beyond these pale golden ochreous, anal tuft purple-brown, mixed above with pale ochreous. Legs: anterior pale ochreous densely dusted and mottled with dark fuscous, tibia and each joint of tarsus strongly dilated by whorls of scales, median leg similarly dilated, femur bronze-brown with a black ring, tibia much dilated, rough, fulvous-ochreous, tarsus ochreous-whitish; posterior leg pale ochreous, strongly mixed with fuscous-brown except above, tibia with two very large rounded loose whorls of scales, in middle outwardly and at apex above, upper side with projecting fine and long hairs, tarsus dilated with large whorls projecting above, one on each segment.

Fore wing long and narrow, oval-sublanceolate, costa curved at base, concave in middle, apex rounded, termen rounded, very oblique. Glossy pale ochreous, strewn with light and dark brown. A slight longitudinal raised tuft along and below costa near base, resembling a costal fold. Costa coarsely suffused with dark brown, along less than posterior half with five suffused silvery-white spots, becoming smaller posteriorly, ultimate subapical; four smaller similar spots along termen, lower fasciate; a large prostrate-X-shaped dark brown mark along median third of lower edge of cell, posterior upper leg followed by a small inwards-oblique pale transverse mark in cell; anterior extremity of the X forming a slightly raised transverse crest; a dark brown thick bar of slightly raised scales along closing vein; indistinctly continued with upper posterior leg of the X; a faint white suffused transverse mark edging lower half of closing vein posteriorly, wing beyond this from tornus to vein 8 and as far as termen, stronger suffused with dark brown except an irregular conspicuous white patch in its centre, before and slightly above middle. Cilia deep bronze-fuscous, lower half along posterior part of costa, in apex and along termen barred with blackish-brown, bars becoming shorter along costa towards apex, broader again from apex to tornus.

Hind wing glossy light ochreous, dusted evenly with purple, more so towards dorsum, veins brightly purple. Cilia light golden-ochreous, a purplish suffused submedian shade, well-defined around apex and along upper half of termen.

♀ 48 mm. Similar to male, but entirely intact and therefore markings more distinct. Denser strewn with purple; a pale round basal patch, its edge strongly rounded and raised; this patch whitish-ochreous, little dusted with very pale purplish; X-mark reduced to a streak along fold below median third of cell, continued as an oblique shadow across cell to $3/4$ of upper edge, followed by an inwards-oblique small white transverse mark; a dark purple streak below posterior fourth of upper edge of cell and below vein 8 to beyond furcation with 7; mark on closing vein broad, blackish-purple, crescentic and edged on both sides with white, posterior edge extending downwards to fold before its end, area between

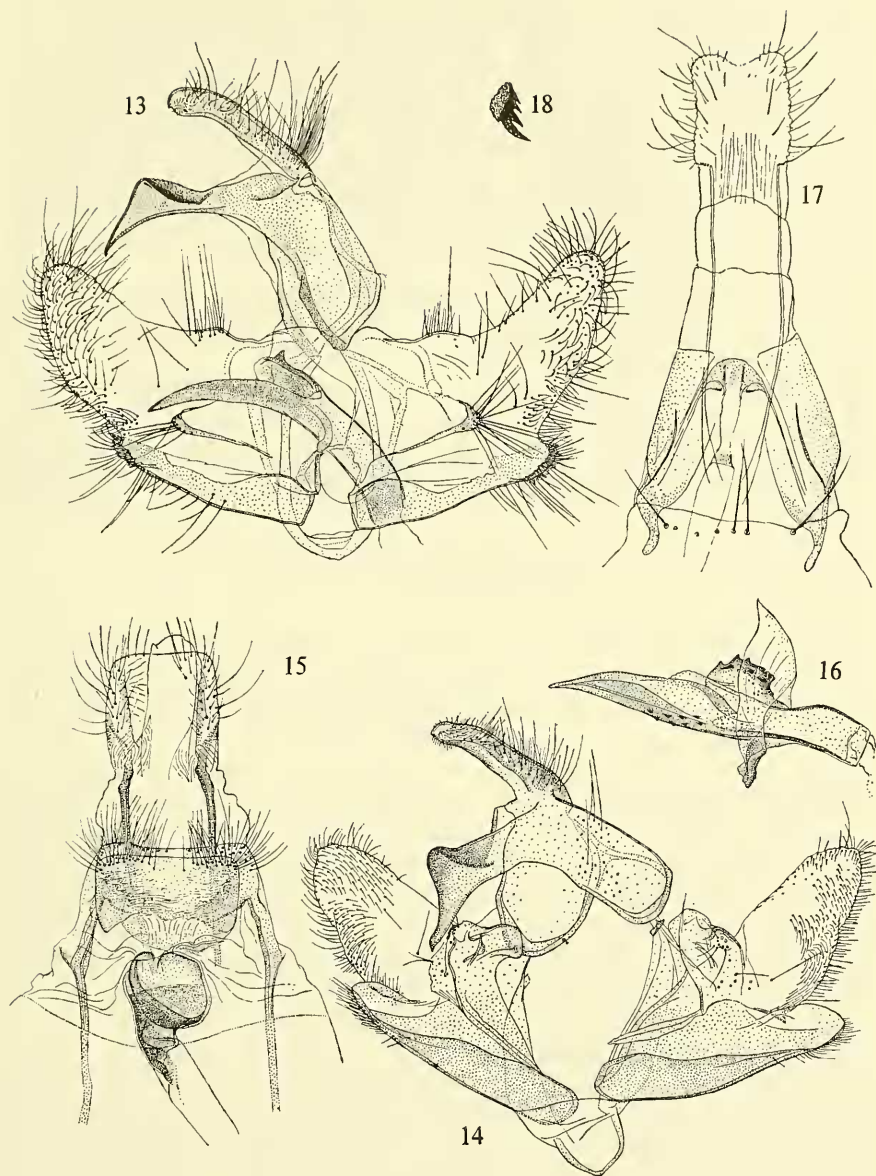


Fig. 13—18. Genitalia of Oecophoridae. 13, *Casmara rhodotrachys* spec. nov., ♂ holotype; 14, *C. kalshoveni* spec. nov., ♂, holotype; 15, the same, ♀, allotype; 16, the same, aedeagus; 17, *Tonica effractella* (Snellen), ♀, lectotype; 18, the same, signum

cell and termen deeper dark purple, whitish patch shifted slightly more anterad and costad; some white scales below $\frac{1}{3}$ of costa. Cilia darker suffused.

Hind wing and other parts colored as in male, legs scaled in the same way.

Male genitalia. Uncus rather short, shorter than gnathos. Gnathos strong, with a round central hunch, upper surface coarsely punctulate; frontal profile straight. Valva with sacculus sclerotized throughout, free lobe upcurved, rigid, with a sclerotized marginal blade; costa sclerotized; a club-shaped weak and bristly process in middle of disc resembles a pulvinus; cucullus rhomboidal, angles rounded. Aedeagus gently curved, some three small thorns in middle, an acute ridge along dorsum of apical third.

Female genitalia. Eighth segment sclerotized, densely haired along posterior edge, sternite with a deep emargination. Ostium, colliculum membranous and simple.

Sumatra, Fort de Kock, 920 m, IV.1921, 1 ♂, holotype, gen. no. 6127; II.1922, 1 ♀, allotype, gen. no. 6128 (E. JACOBSON). Nearly allied to *C. exculta* Meyr., differing in the light tawny-vinaceous colour of dorsum not extending above $\frac{2}{3}$ of wing, bordered by black discal markings (streak along upper edge of cell).

Casmara uniata spec. nov.

Fig. 11

♂ 32—41 mm (holotype 37 mm). Head pale ochreous, sides of face blackish, roughish scales around bases of antennae and tufts on vertex, roughly spreading, mixed with black; posterior edge of head with roughish scales, mixed with blackish. Antenna pale ochreous, scape suffused with fulvous; ciliations over 1. Palpus ochreous-whitish, strewn with black scales, denser strewn along lower edge and apex; apical segment with a couple of black scales in middle. Thorax whitish-ochreous, tegulae slightly brighter ochreous; moderately and coarsely mixed with fuscous. Abdomen dark fuscous, posterior edges of segments with pale ochreous bands, preceded by bands of brassy bristles. Legs whitish, coarsely strewn and mixed with black; anterior tibia dilated, brushy towards base, tarsus less dilated; median tibia with a median and an apical fan-shaped brush, median tibia almost white, dilated with sparse loosely projecting hair-scales; posterior tibia with similar, but less dense fan-shaped brushes; apical edge of all brushes black.

Fore wing long and narrow, ovate-lanceolate, subacute, termen rounded and very oblique. Creamy, partly strewn with bright fulvous scales, markings dark fuscous. Base of costa with a subcostal curved ridge of moderately rising loose scales, making impression of a costal fold; this ridge at base and towards apex mixed with blackish; costa from beyond this ridge to $\frac{4}{5}$ with a broad streak of fuscous dusting, becoming narrow posteriorly and edged below by fulvous suffusion; this streak containing five whitish-creamy marginal streaks becoming shorter posteriorly, ultimate small, triangular, subapical; basal patch indicated by a rounded edge of sparse dark dusting at $\frac{1}{4}$, centre of patch creamy, unobscured; a large black inwards-oblique patch in middle of disc at $\frac{1}{3}$, from upper edge of cell to below fold, upper and lower edges horizontal, anterior concave, posterior with a notch above fold, strongly rounded above it, less so below; this patch broadly

edged with creamy on both sides; a bright fulvous-tawny suffusion in middle of wing from costal streak to dorsum, extended along this to tornus and to basal patch, but anteriorly becoming paler and ill-defined; an inwards-oblique transverse spot along closing vein, upper edge truncate, lower rounded, edged with whitish-creamy on both sides, posterior edge extended as an oblique streak to tornus; posterior third of wing from below costa densely suffused with dark fuscous, including an ill-defined central whitish spot well beyond cell and a series of five creamy subterminal transverse strigulae between veins, upper one ill-defined. Cilia fuscous, basal half dark fuscous, pale bars opposite ends of veins.

Hind wing pale ochreous densely strewn and suffused, except along costa, with bronze-fuscous. Cilia pale ochreous with a dark fuscous basal third.

Male genitalia. Similar to those of *C. exculpta* Meyr. but cucullus lower and very oblique, not quadrate as in that species, and sacculus with the free top very short.

West Celebes, Paloe District, Sidaonta, 1500 feet, VII.1937, 1 ♂, holotype, gen. no. 4861 (LM). Paloe, Loda, 4000 feet, V.1937, gen. no. BM 5547, 3 ♂, paratypes. Paloe, Lindoe, 3900 feet, IV.1937, 4 ♂, paratypes. Paloe, Goenoeng Tompoe, 2700 feet, I.1937 (BM). Central Celebes, 1937, 2 ♂, paratypes (BM). All collected by J. P. A. KALIS. 11 ♂.

An elegant species, superficially resembling *Epimecynitis eschatopa* Meyr., from Sumatra, closely and identified accordingly. The neuration, however, is different and the genitalia are distinct. Actually nearest to *C. exculpta* Meyr.

Casmara rufipes spec. nov.

Fig. 35

♂ 39 mm. Very similar to *C. uniata* spec. nov., from West Celebes, but differing as follows. Anterior tibia and tarsus densely suffused with dark fuscous throughout; median tibia strongly expanded, shaped as a single thick conical brush of rather smoothly appressed and finer fulvous scales, with a few slender, bristle-like long and black, strongly projecting scales, median tibia little dilated, white mixed with fulvous; posterior tibia strongly roughly expanded along basal half and with a fan-like apical brush; pale ochreous densely mixed with blackish, tips of tufts black; posterior tarsus expanded towards middle, spindle-shaped, tawny-fulvous.

Fore wing denser dusted throughout with purplish-fuscous (median fulvous area as in *uniata*, absent); marginal costal spots whiter, more rounded; subterminal strigulae whiter, longer and almost interconnected, each followed by a blackish spot; white central spot beyond cell large and conspicuous. Hind wing paler, semi-pellucid in centre, denser suffused with fuscous along vein 1a. Otherwise as *uniata*.

Male genitalia. Tegumen, uncus and gnathos considerably sclerotized. Gnathos strongly swollen, almost angularly prominent, point acute. Valva with free top of sacculus subacute, almost triangular, with a marginal ridge; cucullus with a straight or even slightly concave costal edge, lower edge more or less gradually rounded, without a distinct prominent angle (as present in *C. exculpta*). Aedeagus with a series of four rigid thorns, apical minute, basal large and bifid (in *exculpta* there is an additional larger apical thorn).

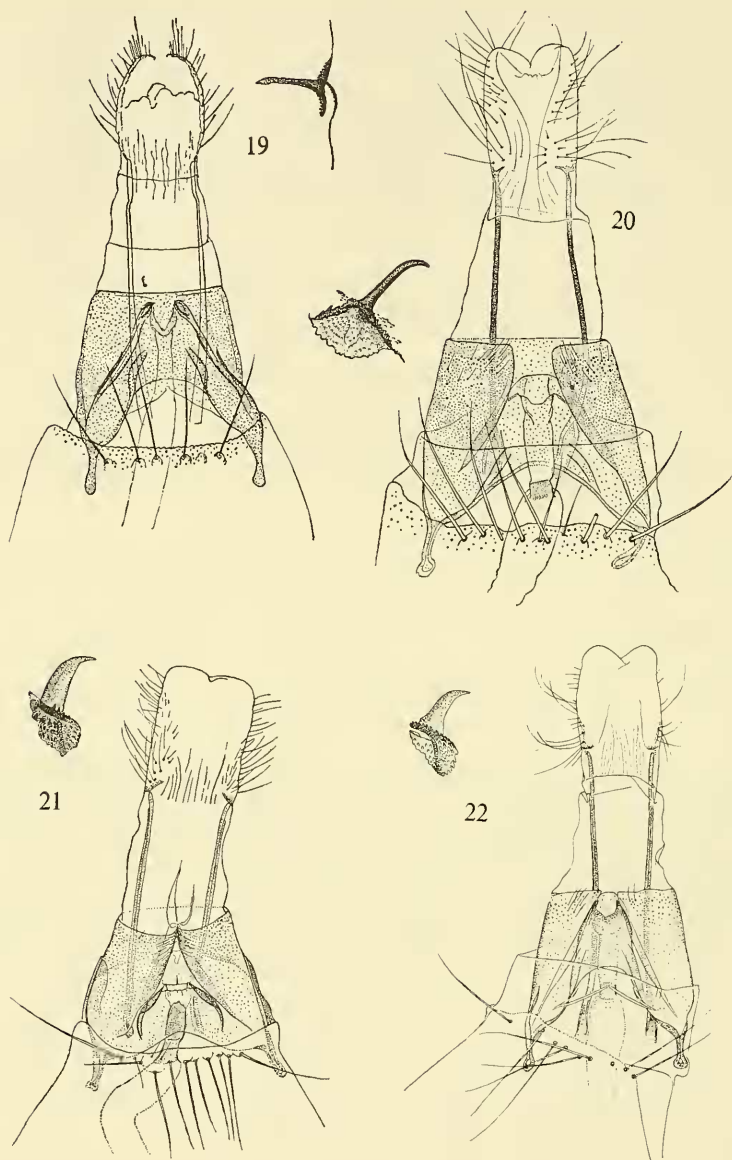


Fig. 19—22. Female genitalia of *Tonica* Walk., holotypes and allotype. 19, *T. melanoglypha* with signum, right; 20, *T. peripsacas* spec. nov., with signum, left; 21, *T. synynoma* spec. nov., signum, left; 22, *T. centroluta* spec. nov., signum, left

West Java (L. J. TOXOPEUS), 1 ♂, holotype, gen. no. 6130. Judging from the genitalia very close to *C. exculta* Meyr. from Assam; there are tangible differences, however, while the hind wing is decidedly much lighter, so that it seems advisable to separate the Javanese species.

Casmara rhodotrachys spec. nov.

Fig. 13

♂ 29 mm. Head purple mixed with light ochreous. Antenna ochreous; ciliations over 1. Palpus purple slightly mixed with light ochreous, median segment exceeding top of scape; terminal segment very slender, smooth, acute; light ochreous with a purple apical half except tip. Thorax purple, tegula with a narrow whitish edge, tufts on metathorax light ochreous. Abdomen brown-fuscous, dorsum with pale bands along posterior edges of segments, mixed with golden spines, anal tuft ferruginous.

Anterior leg dark purplish-brown, tarsus pale ochreous-ringed. Median leg purplish, broadly ringed with light fuscous-ochreous, tibia with an extended pink whorl of scales; posterior coxae dilated with jet-black scales; posterior leg purplish, tibia with a long fringe of light yellowish-ochreous hairs.

Fore wing narrow and long, ovate-sublanceolate, costa curved and prominent along $1/3$, concave in middle, less curved posteriorly; with three transverse ridges of raised scales. Three raised ochreous-pink tufts beyond $1/4$, on costa, above and below fold, respectively, indicating edge of basal patch; this patch blackish with white marks: a line along base of wing, a streak edging upper raised tuft from below and an oblique attenuated streak from base of dorsum to above its $1/4$; second transverse ridge median, inwards-oblique, formed by two raised dark vinaceous tufts, upper transverse, crossing cell, lower smaller, longitudinal, in fold; area between first and second ridges blackish, with a pale ochreous, elongate, subtriangular patch on costa, posteriorly including a black horizontal line, below this emitting a white transverse line before and parallel to ridge of raised tufts; a third raised tuft at $2/3$, from just below costa to beyond lower angle of cell, wedge-shaped, gently inwards-oblique, ferruginous-vinaceous, its base below costa extended on both sides and light pinkish-crimson; space between second and third ridges black, encircled with a white line, edging median ridge but concave and not touching posterior ridge; a blackish streak between veins 8 and 9 indistinctly traversing raised tuft, thence dilated as far as vein 10, including two white submarginal spots between veins; an oblique pale ochreous streak from between the two tufts of median ridge to tornus; terminal part of wing pale fuscous-ochreous, finely dusted with dark fuscous; this colour filling out a broad posterior part of terminal area, but traversed by light tawny veins and cut by a subterminal white meandering line; termen between veins black. Cilia pale fuscous, basal half except in tornus, with broad black interneural bars.

Hind wing pale fuscous, strewn with dark bronze-fuscous, coarser dusted on dorsum, veins narrowly tawny-brown.

Male genitalia. Uncus sclerotized throughout, apex rounded in lateral aspect. Gnathos slender, not swollen. Valva with harpe long-bristled; sacculus sclerotized with a dilated semioval base, top rounded, strong, semioval. Cucullus rather slender, lower edge gradually rounded. Aedeagus divided as far as its middle with a short, toothed upper and a long gradually narrowed and curved lower lip.

East Borneo, Balikpapan, 50 m, Mentawi River, 8.X.1950 (A. M. R. WEGNER), 1 ♂, holotype, gen. no. 6166. An elegant species, nearest to *C. agro-*

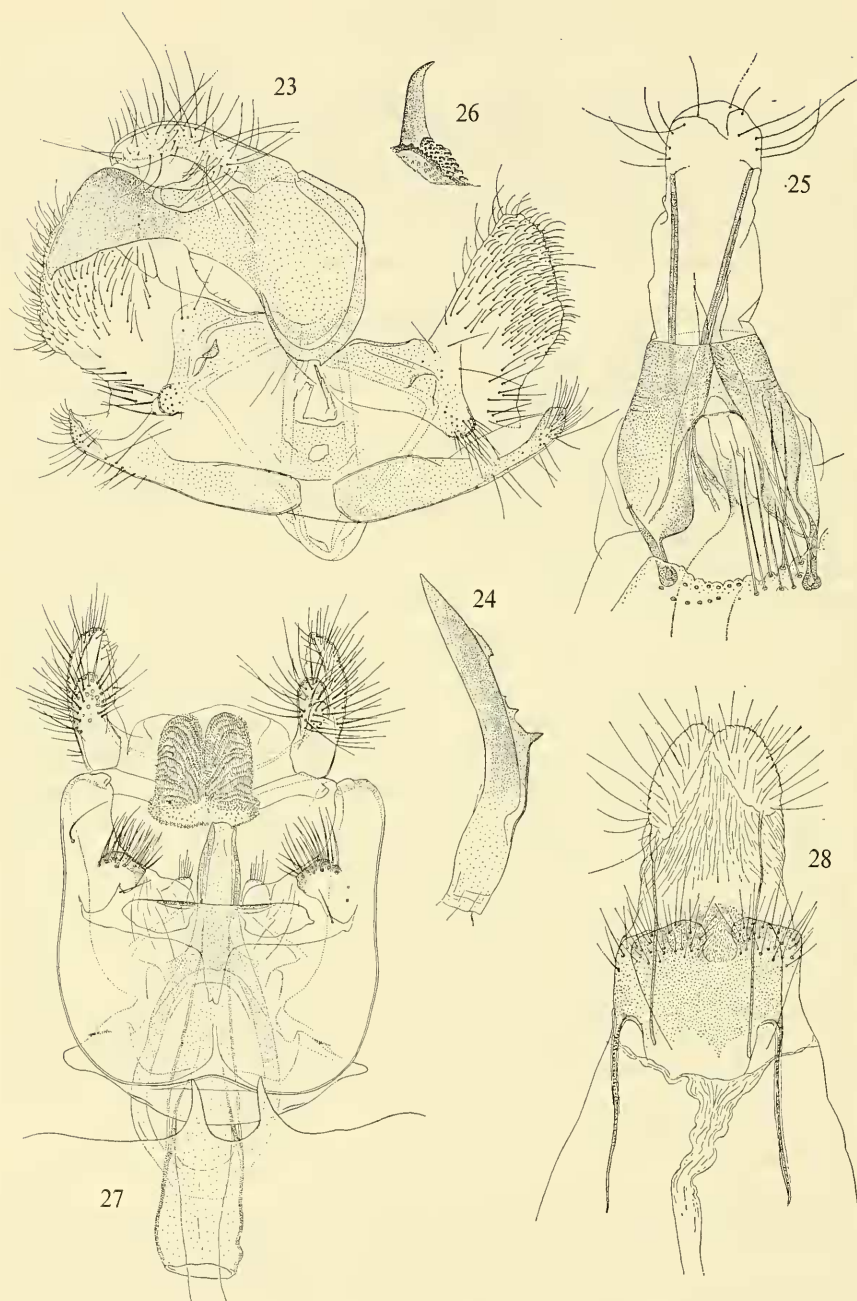


Fig. 23—28. Genitalia of Oecophoridae. 23, *Casmara phobographa* spec. nov., ♂, holotype; 24, the same, aedeagus; 25, *Tonica nigricostella* (Snellen), ♀, gen. no. 4719; 26, the same, signum; 27, *T. melanoglypha* spec. nov., ♂, holotype; 28, *Casmara phobographa* spec. nov., ♀, allotype

noma Meyr. (China), but smaller, brighter marked and with distinct genitalia; the aedeagus resembles more that of *C. patrona* Meyr., also from China, but other parts of the genitalia are quite distinct.

Casmara kalshoveni spec. nov.

Fig. 12, 14—16

♂ 34—44 mm. Head pale ochreous, a flat tuft of long hairs concealing forehead and face and partly covering the eyes; sides of face above and vertex strewn with fuscous-purple. Antenna pale ochreous, scape densely strewn with purple-fuscous, suffused above. Palpus long, recurved, top of median segment exceeding base of antenna, gradually dilated posteriorly with loose scales below, basal segment with a small tuft, terminal segment slender, slightly curved, subobtusate, about $\frac{1}{3}$; pale ochreous densely strewn with fuscous-purple, median segment less densely strewn below apex of upper edge, terminal segment whitish, little strewn, a broad purple ring just below tip. Thorax pale ochreous, coarsely strewn with dark fuscous-purple. Abdomen pale ochreous, dorsum dark fuscous-purple, except pale bands along posterior edges of segments, venter strewn with dark. Legs pale ochreous, variably strewn with fuscous-purple. Anterior tibia strongly dilated with long closely appressed scales; tarsus with short whorls of scales. Median tibia moderately dilated at apex by closely appressed scales, forming a mantle around apical spurs and almost concealing them; posterior tibia with loose long hair-scales above and beneath.

Fore wing elongate, narrow, suboval-lanceolate, apex and termen rounded, termen very oblique. Whitish-ochreous, finely transversely strewn with brown-purple, this colour forming narrow edges to tips of scales, many of which are strongly dilated and enlarged. A large, blackish-fuscous erected-oval ocellus on closing vein, edged with pale ochreous, edge extending to dorsum; this ocellus gently inwards-oblique and dilated above; a large, rather well-defined darker brown-purple V-shaped patch, anterior leg wide, with a blackish round dot against its posterior edge, in cell; posterior leg including ocellus, truncate base of mark extending along median third of dorsum; this patch edged with whitish-ochreous except along costa; blackish longitudinal spot on middle of fold; a white flat tuft below and beyond it; costa strewn with brown-purple throughout; a wedge-shaped spot below its middle (between legs of V-mark) and a similar spot between ocellus and dorsum, conspicuously pale ochreous; slender brighter light ochreous posteriorly dilated small streaks along ends of veins; a regular series of whitish submarginal rounded spots between veins. Cilia pale ochreous, posterior half suffused with purple except in tornus; a deep purple basal streak from costa to end of vein 4, thence broken up in a series of moderate submarginal strigulae reaching dorsum.

Hind wing pale golden-ochreous, irregularly suffused with fuscous-purple: more densely suffused in tornus as far as vein 1c, apex and a faint suffusion above end of cell; a pale golden-ochreous large patch between cell and apex; a suffused round fuscous dot on upper angle of cell. Cilia pale yellowish-golden, a somewhat irregular subbasal purple line.

♀ 37—55 mm. Similar to male. Head only with sides of face and vertex dark;

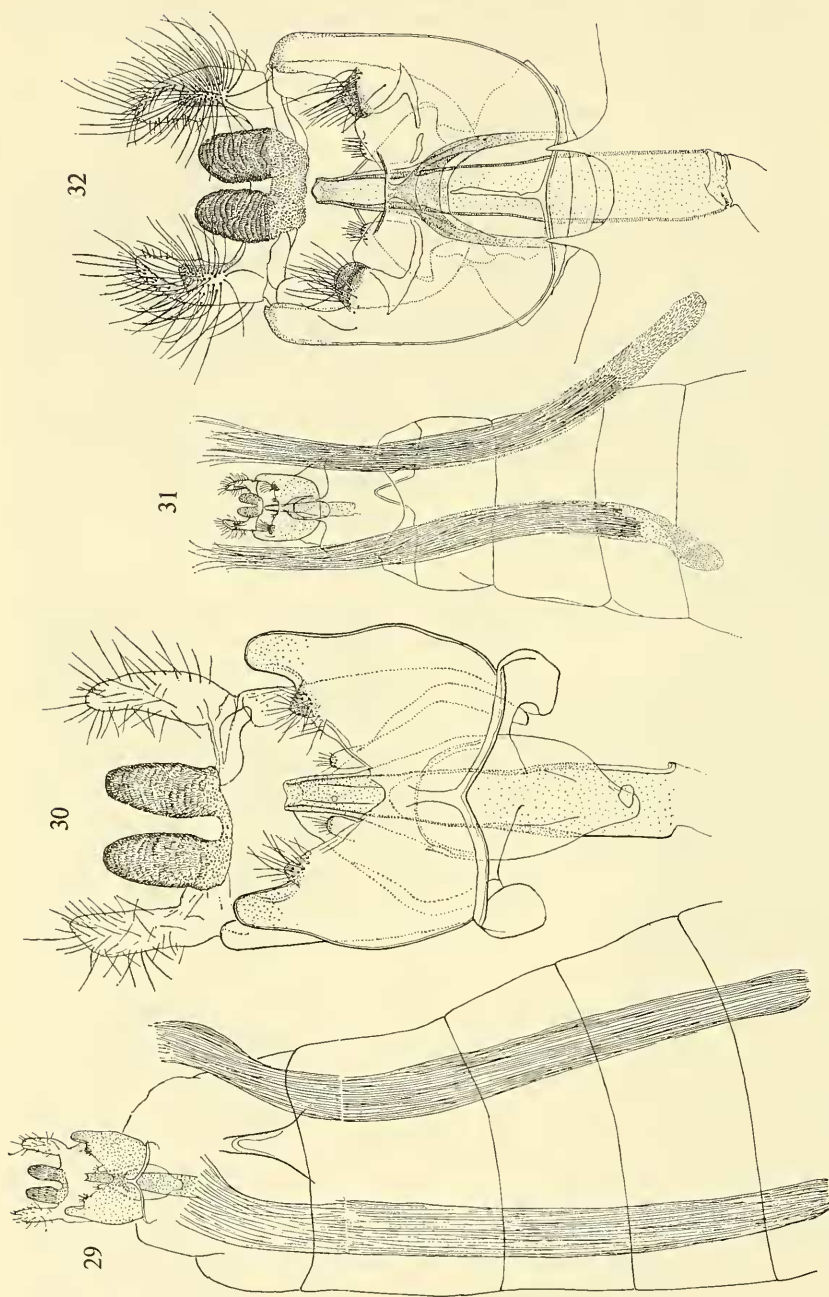


Fig. 29—32. Male genitalia of *Tonica*. 29, *T. nigricostella* (Snell.), abdomen with coremata; 30, the same, genitalia, more enlarged; 31, *T. pharmaciae* spec. nov., abdomen with coremata; 32, the same, genitalia, more enlarged

scape dark on basal half. Fore wing rather evenly strewn with brown-purple, traversed by two curved outwards-convex pale ochreous faint fasciae from below costa: beyond base and at about $1/5$, representing basal patch; a zigzag pale mark below costa on upper half, preceded on dorsum by an inwards-oblique pale transverse streak; two dark discal spots strongly suffused and ill-defined; ocellus black, slightly more oblique, pale-edged, edge continued by a pale streak almost to dorsum before tornus; a coarse dusting by whitish-ochreous scales in disc before the series of interneural pale spots; other markings as in male, more conspicuous.

Hind wing denser suffused with bronze-purplish, except a pale golden area before apex, smaller than in male; otherwise as in male.

Male genitalia. Gnathos with upper side strongly impressed, concave, frontal profile concave, points narrow. Sacculus sclerotized throughout, free, apex semioval, longer than in *C. regalis*, cucullus narrowed, a slight lateral fold or edge above middle. Aedeagus with rather strong teeth beyond middle above and on strong median projection below.

Female genitalia. Eighth sternite with posterior edge straight, not emarginate. Ostium, a broad, oblique cup, strongly sclerotized below. Colliculum, an irregular short funnel.

Central Java, Gedangan near Semarang, teak forest, 40 m, bred from trunk of *Muraya paniculata* Jack (Rutaceae), 1 ♂, holotype, 31.I.1933, gen. no. 4859; 1 ♀, allotype, 9.I.1933, gen. no. 4860. Further from Gedangan, Telawa and Seneng, teak forest area, some bred as above, III, VIII and IX.1932 and I-II, 1933, 3 ♂, 7 ♀, paratypes (L. G. E. KALSHOVEN).

Judging from the genitalia, closely allied with *C. exculta* Meyr., from Assam, differing by more prominent gnathos, oval cucullus and oval tip of sacculus; however, superficially that species is entirely different.

Dedicated to my friend and colleague, the collector, Dr. L. G. E. KALSHOVEN.

Tonica Walker, 1864

Tonica Walker, 1864, List Lep. Het. Brit. Mus. 29 : 788 (Type-species, *Tonica terasella* Walker, India, ? Borneo). — Meyrick, 1922, Genera Ins. 180 : 167. — Fletcher, 1929, Mem. Agr. Ind., Ent. 11 : 226. — Gaede in Bryk, 1939, Lepid. Catal. 92 : 266.

Binsitta Walker, 1864, List Lep. Het. Brit. Mus. 29 : 832 (Type-species, *B. niviferana* Walker, India, Ceylon, Tonkin, China). — Meyrick, 1902, Trans. Roy. Soc. S. Austral. 26 : 163.

Teratomorpha Turner, 1896, Trans. Roy. Soc. S. Austral. 20 : 20 (Type-species, *Cryptolechia effractella* Snellen, Queensland).

Cononia Snellen, 1901, Tijdschr. Entom. 44 : 80 (Type-species, *Cryptolechia effractella* Snellen, Queensland). — Fletcher, 1929, Mem. Agr. Ind., Ent. 11 : 54 (designation of type-species), 226. — Gaede in Bryk, 1939, Lepid. Catal. 92 : 266.

A remarkable group of large insects of uniform facies but diverse size, markings and colouring. The male genitalia show a high degree of specialisation.

Male genitalia very small as compared to the size of the abdomen, complicated, parts rigidly joined together and not easily read. Valvae and vinculum united into a short cylindre, spherical at base, edge of the base of sacculus with two hairy processes, exterior largest. Cucullus free, hairy. Uncus absent. Gnathos represented

by two densely spinose conical processes. Aedeagus long, straight. Coremata represented by a pair of extremely long retractile pencils projecting between the sixth and the seventh segments, extending almost to the base of the abdomen.

Female genitalia. Ovipositor long, top weak. Eighth segment sclerotized, truncate-conical, ventrally with a broad, triangular split; in this fits the sterigma which is usually weakly developed but shows clear-cut specific differences. The edge of the sternite with strong bristles. Ductus bursae very long, simple, tightly spiraled. Corpus bursae elongate. Signum, a scobinate plate with strong edge and diverse long hooks.

Tonica effractella (Snellen, 1879)

Fig. 17

Cryptolechia effractella Snellen, 1879, Tijdschr. Entom. 22 : 11, t. 7 figs. 17—25.

Teratomorpha effractella : Turner, 1896, Trans. Roy. Soc. S. Austral. 20 : 20.

Cononia effractella : Snellen, 1901, Tijdschr. Entom. 44 : 80.

Binsitta effractella : Meyrick, 1902, Trans. R. Soc. S. Austral. 26 : 164. — Turner, 1917, *ibid.* 41 : 119.

Tonica effractella : Meyrick, 1922, *Genera Ins.* 180 : 168, no. 3 — Gaede in Bryk, 1939, *Lepid. Catal.* 92 : 266. — Common & Arndt, 1959, *Empire Cotton Wool Rev.* 36 : 28-31, fig. 1—5.

Lectotype, female, hereby selected, 27 mm, "N. and Ind. Natuurk. Vereeniging, Nieuw Holland", label written in SNELLEN's hand; gen. no. 6126. Another female, syntype (paratype), 29 mm, "N.I. Nat. Ver., N. Holl.", original round white label, written in ink.

Female genitalia. Sterigma transverse-semioval with small crescentic sclerites at the sides of lower edge; ostium, a short tube, colliculum a moderate dark ring. Signum very strong, a concave plate with a number of strong teeth decreasing in size in one direction.

Tonica syngnoma spec. nov.

Fig. 21, T. 1 Fig. 1

Tonica nigricostella ♂ Meyrick, 1936 (nec Snellen, 1902), *Exot. Microl.* 5 : 51.

The unique specimen may be redescribed as follows.

♀ 32 mm. Head and thorax white, irrorated with fuscous-grey. Palpi missing (in original description stated as being "whitish and grey, second joint suffused black"). Abdomen light ochreous, venter infuscated, preanal segment black entirely, anal tuft orange-ochreous.

Fore wing elongate-subtruncate, moderately broad, costa curved at base, broadly rounded-prominent along first third from beyond base, concave in middle, rounded and prominent again at $3/4$, tolerably straight towards apex, apex rounded, termen slightly rounded, little oblique. Whitish, dusted rather irregularly with grey-fuscous, markings chestnut-brown and black. A well-defined, semioval blackish-brown spot on basal $1/6$ of costa, below bearing a suffused black longitudinal streak, projecting posterad; a small black dot on base of dorsum; posterior $2/3$ of costa with a chestnut-brown broad streak, narrowed anteriorly and connected along costal edge by black dusting with basal patch; lower edge of this streak roughly serrate and

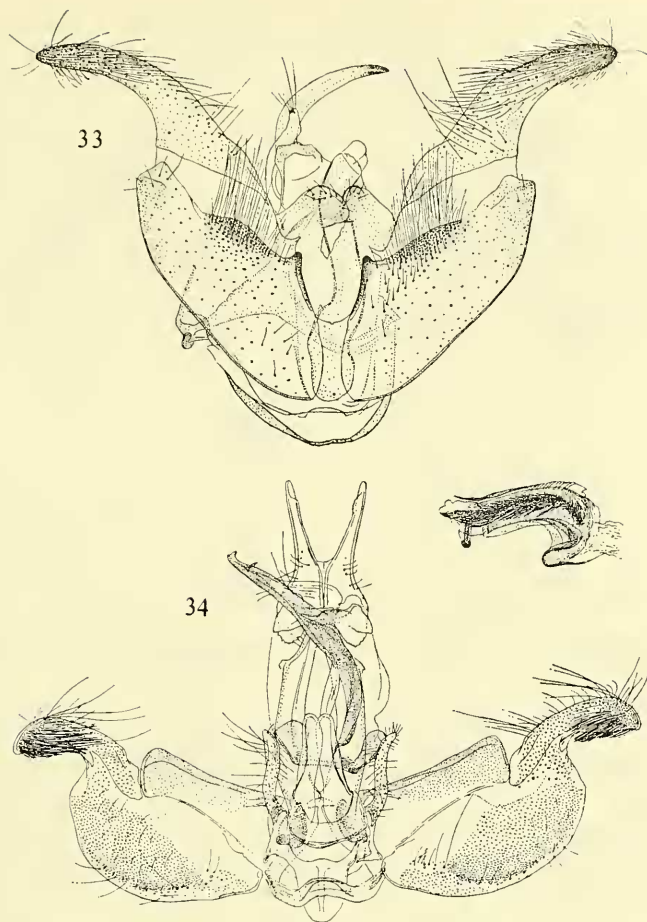


Fig. 33. *Imma mormopa* Meyrick, ♂, genitalia (no. 4791). Fig. 34, *Ethmia submersa* spec. nov., ♂, holotype

well-defined, veins indistinctly streaked with tawny-ochreous (perhaps simply rubbed!), posterior lower part of streak (below vein 7) dark fuscous-brown; first stigma represented by a black prostate γ -shaped mark, with stalk directed posterad, preceded and followed by pairs of rather irregular small marks; second discal stigma well-defined, black, transverse, semioval, immediately followed by a slender raised white crest, an ill-defined greyish suffusion from beyond second stigma to dorsum; ill-defined transverse linear black marks, one in tornus, another before termen, connected with costal streak. Cilia purplish-brown (imperfect) with a pale ochreous base and a black submedian band.

Hind wing glossy pale ochreous, densely dusted with dark fuscous, except towards dorsum and less densely, along costa; extreme apex slightly dusted with black. Cilia ochreous-fuscous, becoming darker fuscous towards apex, in apex dark brown.

Female genitalia. Ventral split of the 8th sternite closed above. Sterigma, a semi-circular narrow band, weak in middle. Ostium short; colliculum moderate, tubular,

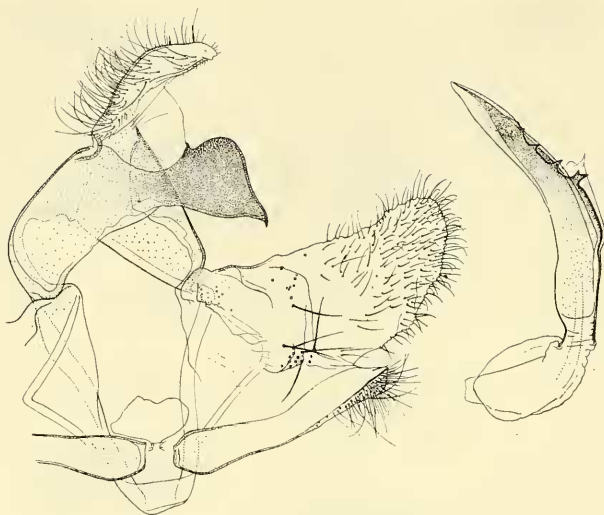


Fig. 35. *Casmara rufipes* spec. nov., holotype, ♂, genitalia

narrower along lower part. Signum small, with a single large hook and a few small spines at its base.

Malaya, Pahang, Tras, 1912 (POPP), 1 ♀, from Meyrick Collection (BM), named "*Tonica nigricostella* Snell." by MEYRICK; gen. no. 4718. This unexpected identification with a completely different species apparently is due to a curious error: MEYRICK thought that *T. nigricostella* Snell. had been described after a male, while SNELLEN's type specimen actually is a female. So there is no question of SNELLEN's *nigricostella* and the present female specimen being conspecific.

Tonica nigricostella (Snellen, 1902)

Fig. 25—26, 29—30

Cryptolechia ? (*Cononia*) *nigricostella* Snellen, 1902, Tijdschr. Entom., 44 : 80, t. 6 fig. 3 (Sumatra, ♀).

Tonica nigricostella : Meyrick, 1922, Genera Ins. 180 : 168. — 1936, Exot. Microlep. 5 : 51. — Gaede in Bryk, 1939, Lepid. Catal. 92 : 267.

♂ 45 mm, neallotype: exactly similar to the female, with the same small extent of variation, viz. the extent of dark brown suffusion of the costal edge in the fore wing and that of the faint grey dusting of the disc and the cilia of the hind wing. The only superficial difference is the anal tuft, pale ochreous in male, blackish in female.

Male genitalia. Gnathos halves longer than middle of cuculli. Free top of sacculus moderate; external hairy prominence rather depressed, internal prominence long, finger-like, edge of sacculus oblique, making ventral excision of edge of genitalia triangular.

Female genitalia. Ventral split of 8th sternite closed above. Sterigma, a weak membrane, including a simple subtriangular ostium. Colliculum, a partly closed moderate tube. Signum scobinate, with a single large hook.

"West Sumatra, Lebong Tandai, 26—31.VIII.1921 (C. J. BROOKS), no. 1227", 1 ♀, gen. no. 4719. — Malaya, Perak (J. L. C. BANKS), 1 ♀ (with doubtful abdomen) (BM).

East Java, Tretes, 3000 ft, V.1932 (J. P. A. KALIS), 1 ♀. — West Celebes, Kulawi, Paloe, 3100 ft, III.1937, 1 ♂, neallotype, gen. no. 4789; 1 ♂, 1 ♀; Sidaonta, Paloe, 4500 ft, VI.1937, 2 ♀; Paloe, Mt. Rangkoenaœ, 1800 ft, XII.1936, 1 ♂ (J. P. A. KALIS) (BM, Rothschild Bequest).

The holotype of this species, a female, "Sumatra", unfortunately is missing.

Tonica pharmacis spec. nov.

Fig. 31—32

♂ 25 mm. Head light ochreous, vertex with three faint frontally converging fuscous lines. Antenna light ochreous, finely ringed with brown, scape brownish. Palpus with median segment very long, along upper half hardly strewn with brownish, tuft long, roughly projecting forward; terminal segment with two small tufts projecting forwards and backwards; this segment pale ochreous externally, with two large dark brown spots internally. Thorax light ochreous, apex and an antemedian band suffusedly brownish; four highly raised tufts arranged in a quadrangle; tegula pale ochreous, internal edge infuscated. Abdomen pale orange-ochreous with a strong golden gloss. Legs pale ochreous.

Fore wing elongate-subtruncate, moderately broad, little narrowed posteriorly, costa strongly sinuate, prominent and roughly ciliate at $1/4$, concave and smooth in middle, less prominent and slightly rounded along posterior third, two large triangular raised scale-tufts, at the beginning, and in the middle of this part, apex moderately pointed, termen slightly sinuate above, rounded beneath, little oblique. Light ochreous, across middle third becoming brighter, ochreous-tawny, markings formed by brown suffusion. A broad, rather well-defined streak along costa, from well beyond base to apex, extending below as far as upper edge of cell and the course of vein 7; on middle of costa this streak containing a narrow marginal mark of ground colour; an irregular-semioval large patch extending over median $2/3$ of dorsum, touching costal streak with its top; anterior edge of patch rather well-defined, very oblique and concave, posterior edge rather suffused, ill-defined, emitting from its lower part a wedge-shaped paler brown suffusion to $3/4$ of lower edge of costal streak; pale terminal area traversed by brown lines along veins; central third of disc with some four tufts, three upper rounded, in a curved horizontal series, ultimate one on closing vein; fourth tuft larger, elongate, horizontal, in middle of fold; terminal area with two inwards-oblique, straight series of less raised tufts between veins, first series at $2/3$ between cell and termen, second submarginal. Cilia brown along costa, pale ochreous elsewhere.

Hind wing glossy pale ochreous, cell between 1a and 1c towards wing edge dusted with fuscous; apex slightly dusted with dark brown. Cilia pale ochreous, along posterior third of costa and around apex mixed with dark brownish-grey.

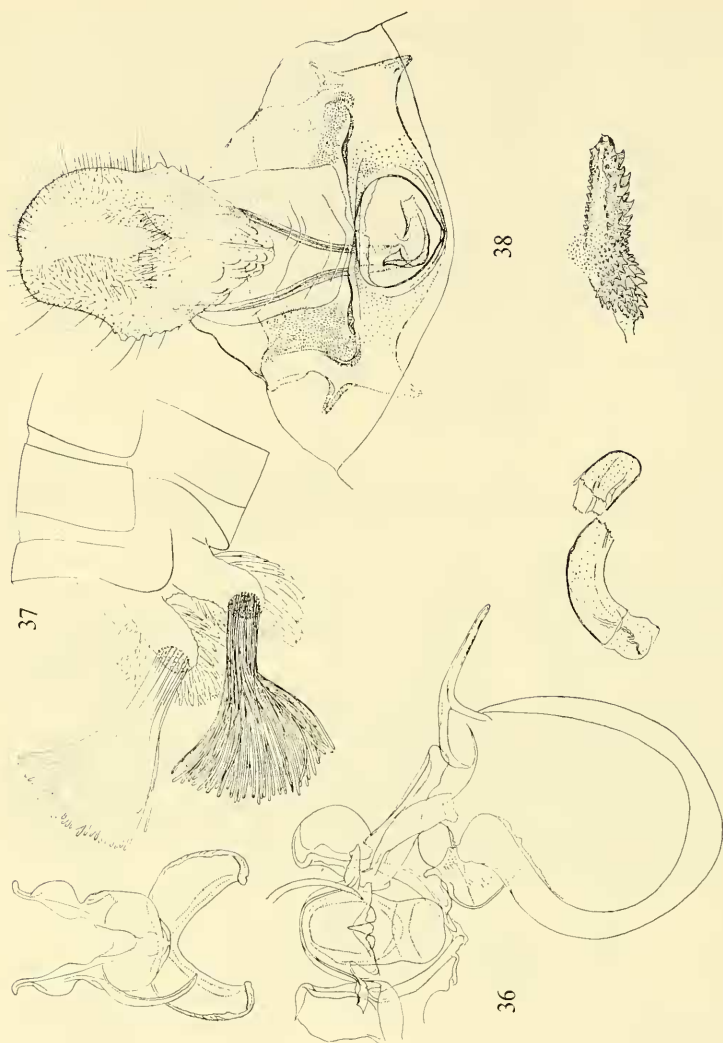


Fig. 36—38. *Chrysebma hypomelas* gen. et spec. nov., genitalia. 36, ♂, holotype, with aedeagus, right; 37, the same, end of abdomen with coremata; 38, the same, ♀, allotype, below, signum

Male genitalia. Gnathos halves thick, not exceeding half the length of cucullus; the latter with a ventral lobe. Sacculus with a rather long free top; external hairy prominence large, internal depressed.

Northeast Sumatra, Deli, bred from larva on *Derris*, V.1935 (Deli Proefstation), 1 ♂, holotype, gen. no. 4717. Unique. Allied to the preceding species, but quite differently colored and marked.

Derris plant produces a well-known insecticide; thence the name for the species.

Tonica centroluta spec. nov.

Fig. 22

♀ 26 mm. Head glossy creamy-white, vertex suffused with dark fuscous in middle. Antenna whitish-ochreous, dark fuscous above. Palpus with median segment with rather appressed scales and a long not expanding tuft in front, projecting forward; terminal segment slender, longer than median, slightly dilated and roughish anteriorly at the first dark band; creamy-white, median segment with a short lateral streak from base; a suffused fuscous streak along posterior half of its lower edge, and a very coarse irroration along upper half, blackish-fuscous; frontal tuft infuscated along lower edge; terminal segment with two blackish-fuscous rings. Thorax creamy dusted with dark fuscous (rubbed). Abdomen glossy dark fuscous. Legs whitish-ochreous.

Fore wing moderately broad, elongate-subtruncate, moderately narrowed posteriorly, costa strongly sinuate, rounded-prominent along anterior half, concave in middle, almost straight posteriorly, apex rounded-rectangular, termen straight above, rounded beneath, little oblique. Whitish-ochreous, markings light tawny and dark purplish-brown. A light fulvous-tawny suffusion along posterior $\frac{3}{5}$ of costa, continued by a narrow gradually attenuated subcostal streak to anterior extremity of costal prominence; posteriorly this suffusion is narrowly interrupted by strigulae of ground colour running along veins, each edged by an irregular dark brown line; a dark purplish-brown transverse patch across its anterior edge well-defined and concave anteriorly, very oblique, to about $\frac{1}{6}$ of dorsum; its posterior edge strongly suffused, at about middle of distance between cell and termen, leaving a terminal blotch of ground colour, pale at edge of wing, anterad gradually becoming suffused with light fuscous-purplish, a dark purple-brown line along posterior part of fold, not reaching tornus; some sparse speckling of pale tawny and brown scales over pale basal area; this area has an oval shape and contains a small obliquely transverse brownish raised crest at about $\frac{1}{3}$ of wing length in middle of disc; a higher dark brown tuft on lower angle of cell, another smaller one above and slightly before it and a still higher horizontal short crest just above fold and beyond transverse crest; apex pale, narrowly margined with brown. Cilia (imperfect) pale ochreous, along upper part of termen and in apex apparently mixed with dark brown.

Hind wing rather dark purplish-grey, apex and dorsum suffusedly pale ochreous, space between veins 1a—1c towards edge of wing suffused with dark brown. Cilia rather pale fuscous.

Female genitalia. Ventral split of the 8th sternite open. Sterigma triangular, lower edge concave. Lamella antevaginalis with four converging ridges, a small strong cup-shaped ostium at their top. Colliculum tubular, long, lower part, a short dark cylindre. Signum strongly scobinate, hook simple, broader and shorter than in *T. pharacis* spec. nov.

Southeast Borneo, Ampah, 0—50 m, IV-V.1948 (LIEM SWIE LIONG), 1 ♀, holotype, gen. no. 4694.

Tonica peripsacas spec. nov.

Fig. 20

♀ 31 mm. Head pale ochreous, vertex slightly mixed with brownish. Palpus with median segment whitish-ochreous, strewn along median third with a longitudinal group of a few fine fuscous scales, continued as a horizontal streak of pale fuscous-grey suffusion just below upper edge of frontal tuft, lower edge and base of median segment, and basal segment entirely, fuscous; apical segment black inwardly and in front, except at base, and at two tufts ($1/3$ and $2/3$). Thorax pale ochreous (greasy). Abdomen dark bronze-fuscous, becoming pale ochreous towards base.

Fore wing broad, suboval, costa strongly rounded-prominent at $1/3$, serrate-prominent before angle, termen rounded and oblique. Whitish-ochreous, slightly suffused with fuscous-grey, tending to form longitudinal streaks. Markings dark fuscous, slightly suffused; slightly rubbed, but the following raised tufts present: a small one on base of upper edge of cell, another on its middle; a strongly raised tuft on closing vein and a similar, large one, before middle of lower edge of cell, the last one with a fuscous-grey base. A slightly excurved transverse series of markings (probably edge of basal patch) before $1/5$: a subquadrate spot on costa continued posteriorly by a narrow line along extreme edge of costa; a suffused horizontal line from base along upper edge of cell and a second parallel line from beyond base just below preceding; and a short horizontal strigula well below fold; these markings indistinctly continued posteriorly by streaks of faint greyish suffusion which tend to converge in a faint cuspidate greyish spot in centre of disc, marked with a small horizontal strigula and a black point above and parallel to middle of fold; posterior fourth of costa with four elongate marginal spots, more or less interconnected by fuscous suffusion; a series of fine moderate lines of dark fuscous dusting along veins, from vein 11 at costa to vein 1c on dorsum, lines between these in a broadly curved subapical series. Cilia whitish with three minute spots of fuscous dusting above ends of veins 6, 5 and 4.

Hind wing pale ochreous, densely dusted with pale grey, along all veins dusted with darker fuscous, extreme base white, separated by a transverse oblique dark fuscous line. Cilia pale ochreous suffused with pale grey, a pale grey subbasal shadow, opposite apex a median and an apical blackish streaks.

Female genitalia. Sterigma with a rounded top, lamella postvaginalis laterally forming sclerotized elongate-semioval plates; lamella antevaginalis, a moderate rim to ostium, slightly dilated laterally. Colliculum weak, a narrow ring. Signum robust, a scobinate plate with a long and slender thorn (foreshortened in figure).

West Celebes, Koelawi Paloe, 5100 feet, March, 1937 (J. P. A. KALIS), 1 ♀, holotype, gen. no. 6131 (Rothschild Bequest, BM).

Superficially resembling *T. lagaropis* Meyr. from the Philippines, but differently marked and with distinct genitalia, which resemble those of *T. effractella*, but are more sclerotized.

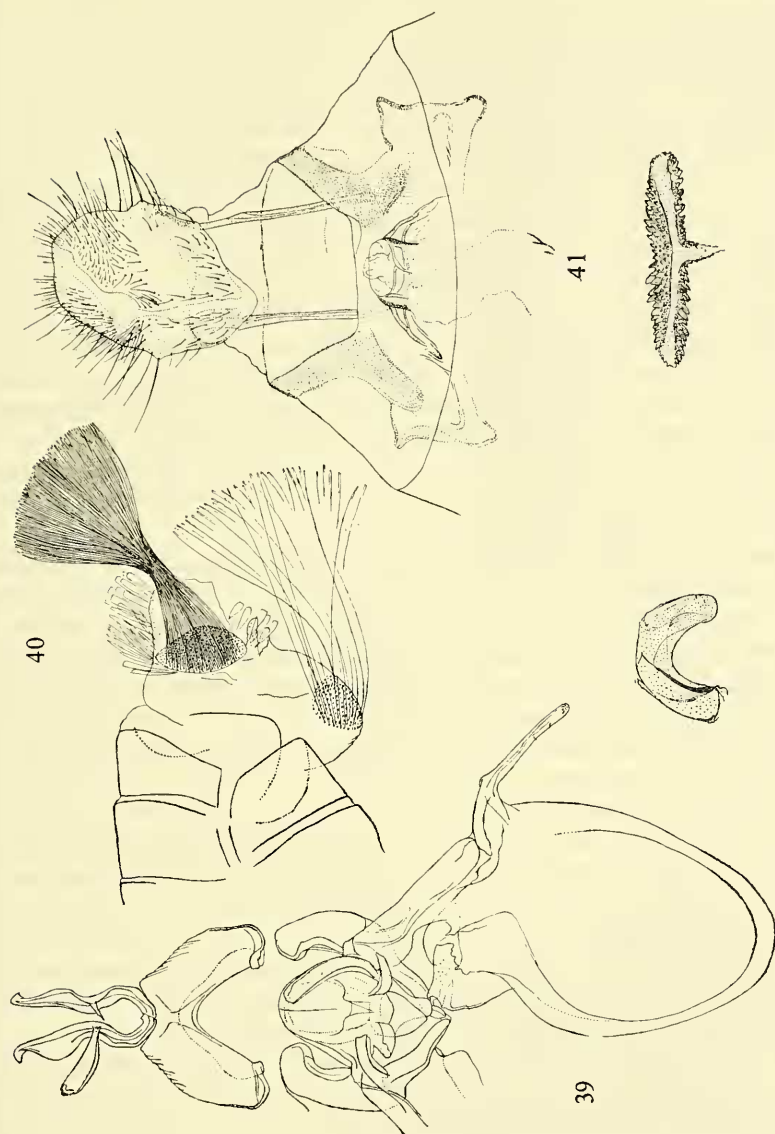


Fig. 39—41. *Chryseibmia neogena* gen. et spec. nov., genitalia. 39, ♂, holotype, with aedeagus, right; 40, the same, end of abdomen with coremata; 41, the same, ♀, allotype, below, signum right;

Tonica melanoglypha spec. nov.

Fig. 19, 27

♂ 19 mm. Head creamy-white, vertex sparsely dusted with fuscous. Palpus very long, median segment creamy-white, strongly brushy along edges, especially in front; terminal segment slender, slightly tufted in front and back at $\frac{1}{3}$ and $\frac{2}{3}$, outwardly creamy with two narrow black bands, inwardly lower third black, a broad band at $\frac{1}{3}$, in front upper third with a black streak. Thorax rather dark

fuscous-grey, collar and tegula creamy, dusted with fuscous. Legs creamy, tarsi infuscated towards tips. Abdomen creamy.

Fore wing oblong, narrow, costa strongly curved along basal third, concave in middle, little curved posteriorly, with a rough triangular tuft projecting forward at $1/3$ and a series of three small tufts at $3/4$, apex rounded, termen rounded, oblique. Creamy, partially finely dusted with pale greyish-fuscous, not dusted towards costa anteriorly and between veins elsewhere; dorsal area below fold evenly suffused with pale greyish-fuscous. Markings sparse, blackish-brown. A triangular well-defined spot on costa just before first costal tuft; an ill-defined elongate horizontal suffusion below and slightly beyond this spot and a narrow strigula below this, below fold; two very small longitudinal marks in cell at $2/5$; apical half of costal edge with a narrow line becoming broader posteriorly, forming a distinct blotch in apex, linear again along upper fourth of termen; this streak interrupted by three costal tufts of ground colour, each with an oblique black short strigula below costa; large raised scale-tufts of pale ground colour; a vertical pair at $1/3$ of disc, a horizontal pair above centre of disc and a transverse, slightly inwards-oblique complete series before termen. Cilia creamy-white, around apex with an apical and a subbasal blackish band.

Hind wing creamy-white, apex slightly bent down, narrowly edged with a short black strigula. Cilia concolorous, along posterior half of costa and around apex suffused with leaden-grey with pale base and a blackish subbasal line around apex.

♀ 22 mm. Head and palpus more dusted with fuscous. Fore wing more dusted with fuscous, dark markings extended, a larger suffusion in centre of disc, all veins streaked with dark fuscous; black subcostal strigulae towards apex longer. Hind wing pale greyish-fuscous, veins a trifle darker, apex dusted with fuscous. Cilia grey-fuscous. Otherwise as male.

Male genitalia. Gnathos halves moderate, with an extended communal base. Cucullus deeply bilobed. Sacculus top sclerotized, the hairy prominence large but flattened. Lobus analis small, free. Lower edge of sacculi horizontal, long and slender. Edge of 7th ventrite with two approximated cusps. Coremata reaching basad to the 3rd segment.

Female genitalia. Split of the 8th ventrite open. Sterigma deeply excised above, ostium cup being elongate; lateral ridges narrow, submedian thick. Colliculum tubular, weak. Signum small, short-dentate with a single very long spine.

West Java, Batavia, 1893, 1 ♂, holotype, gen. no. 4816; the same, 1894, 1 ♂, paratype; the same, 1888, 1 ♀, allotype, gen. no. 4817; 2 ♀, paratypes. 2 ♂, 3 ♀. Allied to *T. pharmacis* spec. nov.

ETHMIIDAE

Ethmia submersa spec. nov.

Fig. 34

♂ ♀ 27 mm. Head and collar white, concavities of antennae black, collar with a large black median spot and a narrow black anterior edge. Palpus greyish-white, median segment with a black basal half and a subapical black ring, open frontally;

terminal segment black with a median ring and extreme tip white. Thorax slaty-grey, with a moderate gloss, whitish-grey in certain lights; a black dot on shoulder, a larger dot at the base of inner edge; a pair of submedian, another of subapical black dots. Abdomen in ♂ bright-orange-yellow, tergite 1 with a large transverse black spot, tergites 5—7 only with black transverse bands along posterior margins, venter with pairs of large spots on segments 2—4 and 6. Abdomen in ♀ similar, but segment 7 with a black ring open ventrally.

Fore wing rather broad, oblong-oval, costa considerably curved, apex and termen rounded. Dark slaty-grey, with well-defined whitish-grey narrow edges to markings and large spots; base of extreme costal edge black; a whitish streak along base of costa limited by the course of vein 12, and containing two black dots; another such streak subcostal, from below middle of preceding to $\frac{2}{3}$ of wing; a less well-defined whitish patch filling out less than posterior fifth of wing with apex and termen; round black dots, except the two costal, arranged thus: one just above fold beyond base; three more, in line with this, at $\frac{1}{4}$, $\frac{1}{2}$ and before $\frac{3}{4}$, respectively; first to third of these alternating with two smaller dots above dorsum; a curved subcostal series, first of these largest, rounded, below upper edge of cell before middle of wing; four smaller below costa and before apex, two ultimate of these connected; two larger, somewhat irregular dots in an oblique series before and above tornus; a marginal series of about ten dots partly interconnected and rather ill-defined, large and irregular. Cilia dark grey.

Hind wing bright orange. Apical black spot large, with an acute subcostal tooth reaching basad to before end of cell, edge below this regularly and deeply curved and reaching end of vein 1c. Cilia orange, around black spot dark grey. On the under side of hind wing apical spot well-defined, connected by a broad grey streak along costa with base.

Female exactly similar, but spot on collar larger, dots on tegulae small, subcostal whitish streak fainter.

Male genitalia. Uncus with a dilated and rounded base, furcate, prongs straight, long. Gnathos with a strong transverse plate, with a rather broad, rounded-truncate lobe on each side; median part of gnathos long and slender, sclerotized, ending in a couple of thorns. Anellus with a bilobed rostral and a rather long and rounded caudal process. Anellus lobes as long as in *E. praeclara* but sinuate. Vinculum sinuate. Valva with sacculus gradually rounded. Aedeagus of the usual shape.

Female genitalia. Sterigma trapezoidal, with the upper edge concave. On each side a large triangular acuminate fold with a rounded top; mesially each fold forms a smaller smooth subcardiform fold. Colliculum, a short funnel, dentate inwardly, upper edge sclerotized but interrupted at one side. Signum rather small, rhomboidal.

West Celebes, Paloe, Mt. Tompoe, 2700 feet, II.1937 (J. P. A. KALIS), 1 ♂, holotype, gen. no. 5547, 1 ♀, allotype, gen. no. 5548 (BM).

Closely allied with *E. pullata* Meyr. from the Solomon Islands, but differing by the genitalia.

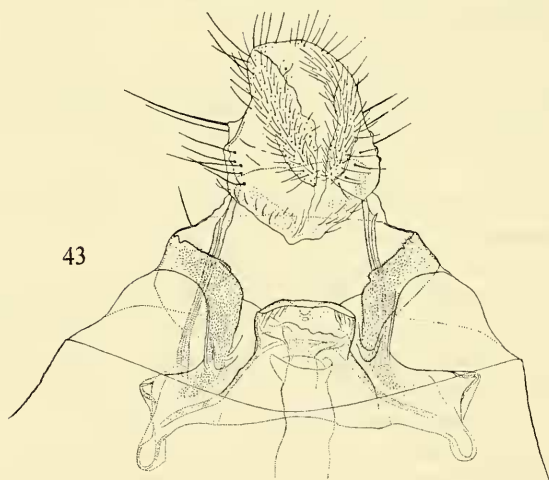


Fig. 42—43. *Agrioceros subnota* spec. nov., genitalia. 42, ♂, holotype; 43, ♀, allotype, above, signum

***Agrioceros subnota* spec. nov.**

Fig. 42—43

♂ ♀ 27—28 mm. Head and palpus pale ochreous, basal half of median segment of palpus black above; face suffused with blackish, vertex with two black spots. Antenna light ochreous, scape with a black subapical posterior spot. Thorax bright orange-yellow, collar with a median black spot, a pair of lateral subapical spots, a

black spot on inner edge of tegula at its base. Abdomen deep orange-yellow, valvae black, a pair of sublateral and one submedian black dots.

Fore wing oblong, oval-subtruncate, costa gently curved, apex and termen rounded, little oblique. Deep orange-yellow. Markings dull black. A streak along base of costa. Basal dots unequal, lower largest; discal spot large, median pair largest; posterior spot well-defined, central shifted towards costa; pretornal spot large, round; a large black dot in apex, a streak along upper half of termen and a minute line halfway between these markings in male, connected with the terminal streak in female. Cilia yellow, black with yellow base opposite marginal markings.

Hind wing in male with an androconial subcostal field of flatly depressed scales reaching to middle; pale golden-yellow, becoming deeper yellow towards apex, in female middle of wing suffused with pale fuscous, neither reaching vein 1c, nor termen. Cilia golden-yellow.

Male genitalia. Tegumen large and broad, pedunculi divided, upper pedunculi resting upon long processus basales. Uncus somewhat depressed, bicornute, horns long, diverging almost horizontally. Labis, a large finely haired, but weak sausage-like process. Valva broad, moderately long; sacculus ill-defined, cucullus broadly rounded-truncate, costa with a long and slender apical process. Aedeagus semi-circular.

Female genitalia. Sterigma large, subtrapezoidal, with aciculate lateral bands, projecting lower angles with rounded appendages to them; transverse portion, being lamella antevaginalis and postvaginalis united, forming a broad tube around ostium bursae. Signum, folded, stellate with a short and broad "stalk".

Central Java, Telawa, teak forest, 1.II.1936, feeding on leaves of an unnamed plant (no. 2003) (Dr. L. G. E. KALSHOVEN), 1 ♂, holotype, gen. no. 6133, 1 ♀, allotype, gen. no. 6140; 1 ♂, 2 ♀ paratypes, gen. no. 6132 ♀.

Superficially almost exactly similar to *A. magnificella* Saub. from the Philippines, differing by the absence of the upper anterior spot of the postmedian group of spots, and by the black, not pale fuscous suffusion of the hind wing. The genitalia, especially of the males, however, are widely differing.

Chrysethmia gen. nov.

Fig. 44

Head with smoothly appressed scales, face entirely smooth. Proboscis developed, except top densely and roughly scaled. Ocellus absent. Antenna smoothly scaled, minutely ciliate in the two sexes. Labial palpus long, recurved close to face, smoothly scaled, median segment not dilated, not reaching top of eye, terminal segment about 2, pointed. Maxillary palpus moderate, slender, top roughish and slightly dilated; appressed to proboscis and slightly crossing each other in front. Thorax smooth. Posterior tibia dilated with long dense hairs above and beneath, flattened laterally.

Fore wing oblong-oval, smoothly scaled, under side with a fringe of scales along costa and vein 12 to beyond $2/3$, concealing vein 12. Vein 2 from before angle, 3 from angle, 4, 5 separate, 7 and 8 stalked, 7 to just above apex, 9 straight, 10 from $3/4$ distance 10—9, 11 from middle.

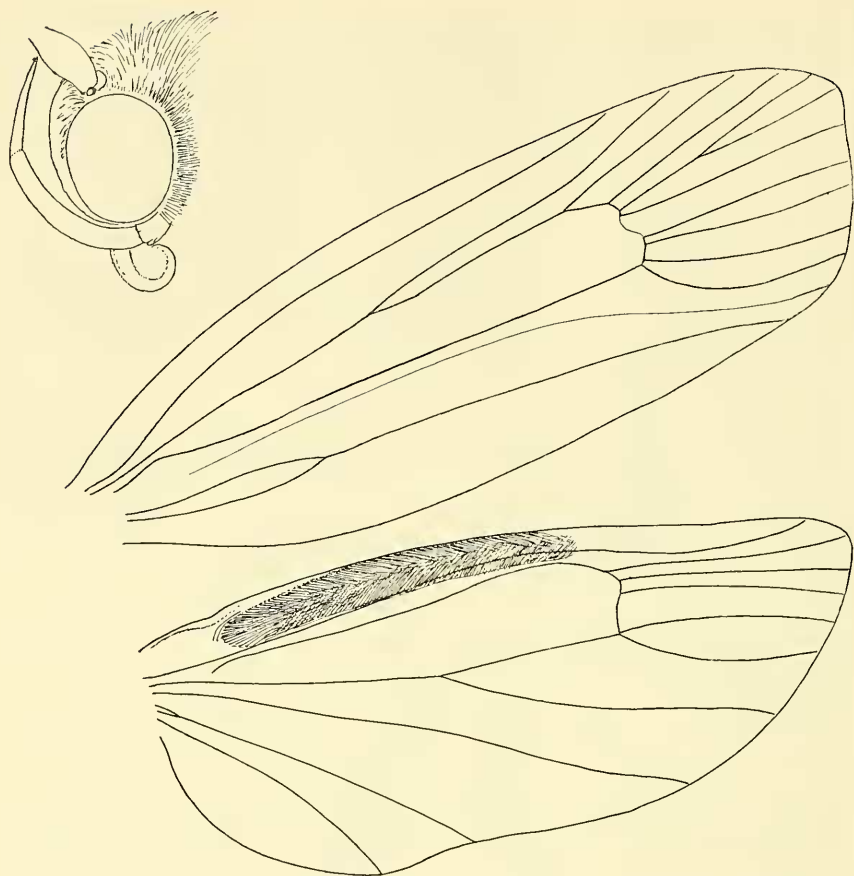


Fig. 44. *Chrysethmia hypomelas* gen. et spec. nov., head and wing neuration, ♂

Hind wing semioval; in male narrowed and more pointed, costa on the upper side with a longitudinal band of androconial modified scales along vein 8, diversely shaped, sometimes very short, sometimes longer and very dense, with additional tufts of pencils of hair-scales from base of wing. Vein 2 from beyond middle, 3 and 4 connate from angle, 5 median, straight, 6, 7 parallel.

Male genitalia. Tegumen semicircular. Uncus broad but short, top bifid. Gnathos entirely paired, tops curved down, simple rods, apparently fastened to transtilla. Valva rounded or oval, rather simple, with a long process at base of costa. Labis, a simple large rising prominence. Aedeagus short. Usually there is a pair of large finger-like extensile appendages of the intersegmental membrane between the 8th and the 9th abdominal sternites, covered with large modified scales and bearing at the top a large pencil-like corema. In one species coremata, surprisingly, absent.

Female genitalia. Ovipositor globular, halves moderately sclerotized. Sterigma, together with the pleurae of the eighth segment forming a large trapeze, with diversely shaped projecting angles and a large central opening or prominence,

being the ostium; colliculum indicated by an irregular sclerite. Ductus bursae spiraled. Signum a transverse moderately broad "lamina dentata".

Type-species, *Chrysethmia hypomelas* spec. nov. (Celebes).

A natural group of tropical species with characteristic compact male genitalia, quite dissimilar from those in *Ethmia* Hubn., to which genus the golden-yellow, black-dotted species have been attributed until present. They are closer allied with *Agrioceros* Meyr., described from the Philippines which is intermediate and forms the connection with *Ethmia*.

Ethmia zelaea Meyrick, 1906, Journ. Bombay Nat. Hist. Soc. 17: 409 (♂, Ceylon), also belongs to the present genus. The genitalia have been illustrated by CLARKE, 1965 (Meyrick's Types 6: 433, t. 214 fig. 3a—b).

KEY TO THE SPECIES

1. Hind wing unicolorous, yellow *zelaea*
- Hind wing partly suffused with grey or black 2
2. Hind wing with a grey suffusion extending almost to apex and exceeding vein 1c *hypomelas*
- Hind wing with a black suffusion (grey in faded specimens) not reaching apex and limited by vein 1c *neogena*

Chrysethmia hypomelas spec. nov.

Fig. 36—38, 44

♂ 26, ♀ 29 mm. Head yellow-whitish, palpus touched with ochreous, face with a vertical median dark fuscous spot, larger in female, vertex with a large dark fuscous spot. Antenna light ochreous, scape yellow-whitish with a black subapical spot on back. Thorax light yellow-orange, a large black spot on median third of collar, two round lateral dots before apex; a small spot on base of tegula below inner edge, partly concealed under collar. Abdomen deep orange-yellow, anal tuft black inside, yellow outside, valvae black; one pair of dorsolateral another, of ventrolateral dots on each segment.

Fore wing oblong, suboval-truncate, costa moderately curved throughout, apex and termen rounded, termen little oblique. Bright glossy orange-yellow, markings, black round spots. A small streak on base of costal edge, a curved series of three equal basal spots: one small spot below costa beyond base, followed by a second, a third below and before first, in fold close to its base; four larger dots arranged in a lozenge in disc before middle, posterior of these largest, in male elongate, lower below fold; five smaller dots in posterior third, shifted towards costa: four in an oblique rectangle, fifth in its centre; anterior pair of these dots largest; in female these dots small; a small pretornal dot on dorsum just below end of cell; four elongate dots along apex and upper part of termen, apical longest, second small, remaining dots often interconnected. Cilia concolorous with wing, with broad black or dark grey bars opposite black marginal spots.

Hind wing in male with a dense brush of very long pale yellow scales along costal $2/3$, directed apicad, covering a patch of short, dark, and bristly hair-scales of the subcostal black brush; wing dark fuscous as far as vein 1c; dorsum light

yellow; extreme edge in apex and along termen suffused with yellow. Cilia yellow.

Male and female genitalia as described with the genus.

West Celebes, Paloe district, Sidaonta, 4500 feet, II.1937, 1 ♂, holotype, gen. no. 5567; Southwest Celebes, Pangean near Maros, 2000 feet, III.1938, 1 ♀, allotype, gen. no. 5568; 1 ♂, 1 ♀, paratypes (BM).

Differs from the following species by deeper yellow fore wing and darker suffused hind wing in the male, while in the female this suffusion is grey and not exceeding vein 1c. The genitalia in the two sexes and the coremata show also clear-cut differences.

Chrysethmia neogena spec. nov.

Fig. 39—41

♂ ♀ 28—29 mm. Very similar to the preceding but differing thus. Palpus, median segment with basal half black above. Head white, face fuscous, mixed with grey and yellowish, suffused with black below. Black spot on vertex tending to fall in two in male, double in female. Thorax deeper orange-yellow, markings as in *hypomelas*. Abdomen deep orange-yellow, valvae black surrounded by a golden anal tuft except beneath, venter with suffused black sublateral and transverse streaks, one pair of dorsolateral dots; abdomen in female with a pair of larger dorsolateral dots and one pair of ventrolateral dots on each segment, without black suffusion.

Fore wing, base of costal edge with a longer black line; basal spots unequal, lower largest, upper small; the four discal spots larger, lower largest; posterior spots very unequal, lower anterior spot and central spot being round and much larger than the irregular posterior pair; pretornal dot large and round.

Hind wing in male with costal brush greyish-yellow, scales denser but shorter than in *hypomelas*; pale yellow, dorsum and apex suffused with deeper golden-yellow; less than posterior half of wing as far as upper edge of cell to before apex, suffused with black, this suffusion with a well-defined convex edge posteriorly, anteriorly becoming light grey and extending towards base; in female this suffusion less extended towards apex, and paler. Cilia yellow.

Male genitalia resembling those in the preceding species, and differing as follows. Upper half of tegumen much smaller than lower. Uncus halves emarginate, not deeply incised near base. Valva oval, longer, less rounded, costal process longer. Corema scales longer and narrower.

Female genitalia. Lateral bands of sterigma acicular, angles more rounded. Ostium more prominent.

Saley Island, Somarisi, 1660 feet, XII.1938 (A. J. P. KALIS), 1 ♂, holotype, gen. no. 5569, 1 ♀, allotype, gen. no. 5570; 1 ♂, 1 ♀, paratypes (BM).